InterLab®

EMC TEST REPORT on

GSM-Gateway

EA-GSM-DIN

Report Reference: MDE_LEIT_1201_EMCa

Dated on: 2013-11-14

Test Laboratory:

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Germany

DAkkS
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Akkreditierungsstelle
D-PL-12140-01-01

Test Location:

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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 testing laboratory.

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0. Testplan / Summary

Standard EN 301 489-1 09/2011 v1.9.2

Chapter	8.2				
Radiated interference Field Strength		**Basic Standard:**	**EN 55022 +A1**		**2006/2007**
Testparameter:	1-6 GHz, Class B, PK/AV-Detector				
OP-Mode		**Setup**	**Port**		**Final Result**
G0900I		setup 3	Enclosure		passed
Testparameter:	30-1000 MHz, Class B, QP-Detector				
OP-Mode		**Setup**	**Port**		**Final Result**
G1800V		setup 3	Enclosure		passed

Chapter	8.4				
Conducted Interference Voltage, AC Port		**Basic Standard:**	**EN 55022 +A1**		**2006/2007**
Testparameter:	0.15-30 MHz, Class B, AV/QP-Detector				
OP-Mode		**Setup**	**Port**		**Final Result**
G0900V		setup 3	AC Power Supply Port		passed

Chapter	9.2				
RF-Electromagnetic Field		**Basic Standard:**	**EN 61000-4-3 +A1 +A2**		**2006/2008 /2010 ***
Testparameter:	3 V/m, 80-1000 MHz; 1.4-2.7 GHz; 80% AM, log 1%				
OP-Mode		**Setup**	**Port**		**Final Result**
G0900V		setup 3	Enclosure		passed
G1800V		setup 3	Enclosure		passed
Testparameter:	6 V/m, 80-1000 MHz; 1.4-2.7 GHz; 80% AM, log 1%				
OP-Mode		**Setup**	**Port**		**Final Result**
G0900I		setup 3	Enclosure		passed
G1800I		setup 3	Enclosure		passed

Chapter	9.3				
ESD Air Discharge		**Basic Standard:**	**EN 61000-4-2**		**2009**
Testparameter:	8 kV				
OP-Mode		**Setup**	**Port**		**Final Result**
G0900I		setup 2	Enclosure		passed
G0900V		setup 2	Enclosure		passed
G1800V		setup 2	Enclosure		passed
ESD Direct Contact Discharge		**Basic Standard:**	**EN 61000-4-2**		**2009**
Testparameter:	4 kV				
OP-Mode		**Setup**	**Port**		**Final Result**
G0900V		setup 2	Enclosure		passed
G1800I		setup 2	Enclosure		passed
G1800V		setup 2	Enclosure		passed
ESD Indirect Contact Discharge		**Basic Standard:**	**EN 61000-4-2**		**2009**
Testparameter:	4 kV				
OP-Mode		**Setup**	**Port**		**Final Result**
G0900I		setup 2	Enclosure		passed
G0900V		setup 2	Enclosure		passed
G1800V		setup 2	Enclosure		passed

Chapter	9.4		
Fast Transients, "Burst", Power Line		**Basic Standard:** **EN 61000-4-4 +A1**	**2004/2010**
Testparameter:	1 kV, 5 kHz		
OP-Mode	**Setup**	**Port**	**Final Result**
G0900V	setup 1	AC Power Supply Port	passed
G1800I	setup 1	AC Power Supply Port	passed
Fast transients, "Burst", Signal Lines		**Basic Standard:** **EN 61000-4-4 +A1**	**2004/2010**
Testparameter:	0,5 kV, 5 kHz		
OP-Mode	**Setup**	**Port**	**Final Result**
G0900I	setup 1	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	passed
G0900V	setup 1	GSM Antenna Port (ANT)	passed
G1800I	setup 1	GSM Antenna Port (ANT)	passed
G1800V	setup 1	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	passed

Chapter	9.5		
RF Common Mode, AM, Power Line		**Basic Standard:** **EN 61000-4-6**	**2009**
Testparameter:	3 V, 80% AM, 150 kHz - 80 MHz, log 1%		
OP-Mode	**Setup**	**Port**	**Final Result**
G0900V	setup 1	AC Power Supply Port	passed
G1800I	setup 1	AC Power Supply Port	passed
RF Common Mode, AM, Signal Line		**Basic Standard:** **EN 61000-4-6**	**2009**
Testparameter:	3 V, 80% AM, 150 kHz - 80 MHz, log 1%		
OP-Mode	**Setup**	**Port**	**Final Result**
G0900I	setup 1	GSM Antenna Port (ANT)	passed
G0900V	setup 3	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	passed
G1800I	setup 1	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	passed
G1800V	setup 3	GSM Antenna Port (ANT)	passed

Chapter	9.7		
Voltage Dips, short Interruptions and Variations		**Basic Standard:** **EN 61000-4-11**	**2004**
Testparameter:	0%/10ms; 0%/20ms; 70%/0.5s; 0%/5s		
OP-Mode	**Setup**	**Port**	**Final Result**
G0900V	setup 1	AC Power Supply Port	passed
G1800I	setup 1	AC Power Supply Port	passed

Chapter	9.8		
Surge, Power Line		**Basic Standard:** **EN 61000-4-5**	**2006**
Testparameter:	1 kV / 2 kV		
OP-Mode	**Setup**	**Port**	**Final Result**
G0900I	setup 1	AC Power Supply Port	passed
G1800V	setup 1	AC Power Supply Port	passed
Surge, Telecommunication Line		**Basic Standard:** **EN 61000-4-5**	**2006**
Testparameter:	0,5 kV / 1 kV		
OP-Mode	**Setup**	**Port**	**Final Result**
G0900V	setup 2	Analogue Emergency-Call Telephone Port (LINE)	passed
G1800I	setup 2	Analogue Emergency-Call Telephone Port (LINE)	passed

* deviation from standard: for details see chapter 3. Test details

Part 1 of EN 301 489 together with the product related part 7 (V1.3.1, 2005-11) specify the applicable EMC tests, the methods of measurement, the limits and the performance criteria. In case of differences between these parts, part 7 takes precedence.

Not all tests were performed which are applicable to the equipment under test. This test report focuses on the RF functionality of the EUT.

The tests "Surge" on the phone line were performed in the laboratory of EMC Competence Center Düsseldorf, Germany, by a 7Layers' engineer.

Responsible for Accreditation Scope:	M. Kullik — Digitally signed by Marco Kullik DN: cn=Marco Kullik, sn=Kullik, givenName=Marco, o=7 Layers AG, serialNumber=0010000000012029050002, email=Marco.Kullik@7Layers.de Reason: I am approving this document Date: 2013.11.15 12:21:40 +01'00'	Responsible for Test Report:	A. Petz — Digitally signed by Andreas Petz DN: cn=Andreas Petz, sn=Petz, givenName=Andreas, o=7Layers AG, serialNumber=0010000000012029180001, email=andreas.petz@7layers.de Reason: I am the author of this document Date: 2013.11.15 11:49:32 +01'00'

1. Administrative Data

1.1 Testing Laboratory

Company Name:	7Layers AG
Address:	Borsigstr. 11 40880 Ratingen Germany
Laboratory Accreditation No.:	DAkkS D-PL-12140-01-01
Responsible for Accreditation Scope:	Dipl.-Ing. Bernhard Retka Dipl.-Ing. Robert Machulec Dipl.-Ing. Marco Kullik Dipl.-Ing. Thomas Hoell Dipl.-Ing. Andreas Petz
Report Template Version:	2013-10-15

1.2 Project Data

Responsible for Test Report:	Andreas Petz
Date of Test(s):	2012-12-14 to 2013-07-24
Date of Report:	2013-11-14
No. of Pages in Annex:	21

1.3 Applicant Data

Company Name:	Leitronic AG
Address:	Engeloostrasse 16 5621 Zufikon Switzerland
Contact Person:	Mr. Silvan Tognella

1.4 Manufacturer Data

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

2. Test object Data

2.1 General EUT Description

The EUT is a GSM moble phone application operating in the bands 900/1800 MHz intended to replace classical "wired" phones, especially at locations where not always power supply from Mains or no phone line is available. The main purpose is the usage as part of emergeny call intercom systems assembled in elevators, including those temporarily fastened at the outside of buildings under construction. The EUT can be powered by a backup battery.
The tests are performed using shorter cables than specified as maximum, the minimum length is greater than 1 m.
The EUT is available in several variants where x indicates the variant in the part number 100.081x.

Equipment under Test: GSM-Gateway

Type Designation: EA-GSM-DIN

Kind of Device: GSM Transceiver
(optional)

Voltage Type: AC / DC

Test Voltage level: 230 V / 14.3 V

- ☐ **Grounding with Power Supply**
- ☑ **No Grounding**
- **Additional Grounding:**

- ☐ **Sensitive to Magnetic Fields**
- ☑ **Not Sensitive to Magnetic Fields**

- ☐ **Industrial Environment**
- ☑ **Household, light industrial Environment**

- ☑ **Conducting Surface**
- ☑ **Isolating Surface**
- ☐ **Mounting Position defined**
- ☑ **Mounting Position not defined**

- ☑ **Fixed Use**
- ☐ **Portable Use**
- ☐ **Vehicular Use**

Ports	Max. Cable Length (m)	Shielded	Process Guide
Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	30	☐	☐
AC Power Supply Port	30	☐	☐
USB Port (EXT)	10	☐	☐
Relay Port (READY)	10	☐	☐
Analogue Emergency-Call Telephone Port (LINE)	30	☐	☐
12 V Non-Interruptable Power Supply Port (12VOUT)	30	☐	☐
Emergency Light Port (EL)	10	☐	☐
Alarm Opto-coupler Input Port (ALM)	10	☐	☐
DC Power Supply Port (14V3IN)	3	☐	☐
Backup Battery Port (BATT)	0,3	☐	☐
GSM Antenna Port (ANT)	30	☑	☐
Enclosure	0	☐	☐

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

Short Description	Equipment under Test	Type Designation	HW Status	SW Status	Serial No.
EUT A (Code: V6010a01)	GSM-Gateway	EA-GSM-DIN 100.0812	L400A / L401A	2.7	12403-1017
EUT B (Code: V6010e02)	GSM-Gateway	EA-GSM-DIN nano 100.0814	L400B / L401A	1.9	12383-1012
EUT C (Code: V6010g03)	GSM-Gateway	EA-GSM-DIN nano 100.0814	L400B / L401A	1.10	12473-1013

2.3 Auxiliary Equipment

Short Description	Auxiliary Equipment	Type Designation	HW Status	SW Status	Serial No.
AUX5	Data Modul USB	Leitronic AG 100.0851	-	-	-
AUX2	Telephone Station	Nano 100.0900	-	"standard"	12435-1038
AUX4	Rechargeable Battery	LIFTRONIC 12V1.3Ah/20Hr	-	-	-
AUX3	AC/DC Converter 230/14.3V	Leitronic AG 118.0117	43-12	-	121217-1
AUX6	Telephone Station	Nano 100.0900	-	"28 dB modification"	13203-1124
AUX1	GSM Antenne	Leitronic AG 1000.0868	-	-	-

2.4 EUT Setups

Setup No.	Combination of EUTs	Remarks
setup 1	EUT A + AUX1 + AUX2 + AUX3 + AUX4	representative configuration to perform the tests in a laboratory environment
setup 2	EUT B + AUX1 + AUX3 + AUX4 + AUX5 + AUX6	representative configuration to perform the tests in a laboratory environment
setup 3	EUT C + AUX1 + AUX3 + AUX4 + AUX5 + AUX6	representative configuration to perform the tests in a laboratory environment

2.5 Operating Modes

Op. Mode	Description of Operating Modes	Remarks
G0900I	idle mode GSM 900	A mode of operation of a receiver or a transceiver, where the Equipment Under Test (EUT) is powered, available for service and available to respond to a request to set up a call.
G0900V	speech call GSM 900	A speech call is established at TCH 60 or 62 (902.0 / 902.4 MHz)
G1800I	idle mode GSM 1800	A mode of operation of a receiver or a transceiver, where the Equipment Under Test (EUT) is powered, available for service and available to respond to a request to set up a call.
G1800V	speech call GSM 1800	A speech call is established at TCH 700 (1747.8 MHz)

2.6 Performance Criteria

Short Description	Performance Criteria	Remarks
CR	In general: - a communication link shall be maintained during the test. - no loss of user control functions or stored data. - unintentional transmission must not occur in Idle mode GSM: - RXQUAL of the downlink shall not exceed three. - the uplink and downlink speech output levels shall be at least 35 dB less than the previously recorded reference levels.	"audio breakthrough"
CT	In general: - a communication link shall be maintained during the test. - no loss of user control functions or stored data. - unintentional transmission must not occur in Idle mode GSM: - RXQUAL of the downlink shall not exceed three. - the uplink and downlink speech output levels shall be at least 35 dB less than the previously recorded reference levels.	"audio breakthrough"
TR	- a communication link shall be established at the start of the test. - no loss of user control functions or stored data. - At the conclusion of each exposure the EUT shall operate with no user noticeable loss of the communication link. - At the conclusion of the total test comprising the series of individual exposures: operate as intended, no loss of user control functions or stored data, as declared by the applicant, communication link shall have been maintained.	-
TT	- a communication link shall be established at the start of the test. - no loss of user control functions or stored data. - At the conclusion of each exposure the EUT shall operate with no user noticeable loss of the communication link. - At the conclusion of the total test comprising the series of individual exposures: operate as intended, no loss of user control functions or stored data, as declared by the applicant, communication link shall have been maintained. - Unintentional transmission must not occur in Idle mode.	-

3. Test Details

3.1 Conducted Interference Voltage, AC Port

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 55022 +A1 2006/2007

3.1.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.1.2 Test Protocol

Temperature 28 °	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1022 hPa	☑ Table Top	☐ With Power Supply	CMD55	☐ Cable Connection
Humidity: 40 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G0900V	setup 3	AC Power Supply Port	0.15-30 MHz, Class B, AV/QP-Detector

Diagram	Detector	Powerline	Add. Scan Information	Remarks	Result
1.01	Peak; QP; AV	N,L1	prescan: fast peak; final scan: QP-detector	please see diagram	passed

Remark: none

3.1.3 Test result: Conducted Interference Voltage, AC Port

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900V	setup 3	AC Power Supply Port	**passed**

3.2 Radiated interference Field Strength

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 55022 +A1 2006/2007

3.2.1 Test Description

The test set-up was realised in a semi anechoic chamber with a measuring distance of 3 m in the frequency range 30 MHz - 1 GHz and above 1 GHz in a fully anechoic chamber with a measuring distance of 2 m according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.2.2 Test Protocol

Temperature 28 °C
Air Pressure 1022 hPa
Humidity: 40 %

Test Setup: ☑ Table Top ☐ Floorstanding

Grounding: ☐ With Power Supply ☑ None ☐

Signalling device: CMU200 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G0900I	setup 3	Enclosure	1-6 GHz, Class B, PK/AV-Detector

Diagram	Add. scan information	Remark	Result
2.02	sweep with Peak and Average detectors	please see diagram	passed

Remark: none

Temperature 26 °C
Air Pressure 1016 hPa
Humidity: 45 %

Test Setup: ☑ Table Top ☐ Floorstanding

Grounding: ☐ With Power Supply ☑ None ☐

Signalling device: CMU200 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G1800V	setup 3	Enclosure	30-1000 MHz, Class B, QP-Detector

Diagram	Add. scan information	Remark	Result
2.01	prescan: fast peak; final scan: QP-detector	please see diagram	passed

Remark: none

3.2.3 Test result: Radiated interference Field Strength

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900I	setup 3	Enclosure	**passed**
	G1800V	setup 3	Enclosure	**passed**

3.3 ESD Air Discharge

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 61000-4-2 2009

3.3.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.3.2 Test Protocol

Temperature 28 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1016 hPa	☑ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 39 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G0900I	setup 2	Enclosure	8 kV

Test Voltage	Reaction of EUT	Remarks	Result
+2 kV	no reaction recognized	none	TT / TR
+4 kV	no reaction recognized	none	TT / TR
+8 kV	no reaction recognized	none	TT / TR
-2 kV	no reaction recognized	none	TT / TR
-4 kV	no reaction recognized	none	TT / TR
-8 kV	no reaction recognized	none	TT / TR

Remark: none

Temperature 28 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1016 hPa	☑ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 39 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G0900V	setup 2	Enclosure	8 kV

Test Voltage	Reaction of EUT	Remarks	Result
+2 kV	no reaction recognized	none	TT / TR
+4 kV	no reaction recognized	none	TT / TR
+8 kV	no reaction recognized	none	TT / TR
-2 kV	no reaction recognized	none	TT / TR
-4 kV	no reaction recognized	none	TT / TR
-8 kV	no reaction recognized	none	TT / TR

Remark: none

Temperature 28 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1016 hPa	☑ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 39 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G1800V	setup 2	Enclosure	8 kV

Test Voltage	Reaction of EUT	Remarks	Result
+2 kV	no reaction recognized	none	TT / TR
+4 kV	no reaction recognized	none	TT / TR
+8 kV	no reaction recognized	none	TT / TR
-2 kV	no reaction recognized	none	TT / TR
-4 kV	no reaction recognized	none	TT / TR
-8 kV	no reaction recognized	none	TT / TR

Remark: none

3.3.3 Test result: ESD Air Discharge

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900I	setup 2	Enclosure	**passed**
	G0900V	setup 2	Enclosure	**passed**
	G1800V	setup 2	Enclosure	**passed**

3. 4 ESD Direct Contact Discharge

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 61000-4-2 2009

3.4.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.4.2 Test Protocol

Temperature 28 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1016 hPa	☑ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 39 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G0900V	setup 2	Enclosure	4 kV

Test Voltage	Reaction of EUT	Remarks	Result
+2 kV	no reaction recognized	none	TT / TR
+4 kV	no reaction recognized	none	TT / TR
-2 kV	no reaction recognized	none	TT / TR
-4 kV	no reaction recognized	none	TT / TR

Remark: none

Temperature 28 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1016 hPa	☑ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 39 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G1800I	setup 2	Enclosure	4 kV

Test Voltage	Reaction of EUT	Remarks	Result
+2 kV	no reaction recognized	none	TT / TR
+4 kV	no reaction recognized	none	TT / TR
-2 kV	no reaction recognized	none	TT / TR
-4 kV	no reaction recognized	none	TT / TR

Remark: none

Temperature 28 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1016 hPa	☑ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 39 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G1800V	setup 2	Enclosure	4 kV

Test Voltage	Reaction of EUT	Remarks	Result
+2 kV	no reaction recognized	none	TT / TR
+4 kV	no reaction recognized	none	TT / TR
-2 kV	no reaction recognized	none	TT / TR
-4 kV	no reaction recognized	none	TT / TR

Remark: none

3.4.3 Test result: ESD Direct Contact Discharge

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900V	setup 2	Enclosure	**passed**
	G1800I	setup 2	Enclosure	**passed**
	G1800V	setup 2	Enclosure	**passed**

3.5 ESD Indirect Contact Discharge

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 61000-4-2 2009

3.5.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.5.2 Test Protocol

Temperature 28 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1016 hPa	☑ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 39 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G0900I	setup 2	Enclosure	4 kV

Test Voltage	Reaction of EUT	Remarks	Result
+2 kV	no reaction recognized	none	TT / TR
+4 kV	no reaction recognized	none	TT / TR
-2 kV	no reaction recognized	none	TT / TR
-4 kV	no reaction recognized	none	TT / TR

Remark: none

Temperature 28 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1016 hPa	☑ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 39 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G0900V	setup 2	Enclosure	4 kV

Test Voltage	Reaction of EUT	Remarks	Result
+2 kV	no reaction recognized	none	TT / TR
+4 kV	no reaction recognized	none	TT / TR
-2 kV	no reaction recognized	none	TT / TR
-4 kV	no reaction recognized	none	TT / TR

Remark: none

Temperature 28 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1016 hPa	☑ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 39 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G1800V	setup 2	Enclosure	4 kV

Test Voltage	Reaction of EUT	Remarks	Result
+2 kV	no reaction recognized	none	TT / TR
+4 kV	no reaction recognized	none	TT / TR
-2 kV	no reaction recognized	none	TT / TR
-4 kV	no reaction recognized	none	TT / TR

Remark: none

3.5.3 Test result: ESD Indirect Contact Discharge

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900I	setup 2	Enclosure	**passed**
	G0900V	setup 2	Enclosure	**passed**
	G1800V	setup 2	Enclosure	**passed**

3.6 RF-Electromagnetic Field

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 61000-4-3 +A1 +A2 2006/2008 /2010 *

3.6.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.6.2 Test Protocol

Temperature 22 °C
Air Pressure 1003 hPa
Humidity: 32 %

Test Setup: ☑ Table Top ☐ Floorstanding

Grounding: ☐ With Power Supply ☑ None ☐

Signalling device: CMU200 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G0900I	setup 3	Enclosure	6 V/m, 80-1000 MHz; 1.4-2.7 GHz; 80% AM, log 1%

Diagram No.	Radiation to	Turntable Position	EUT Pos.	Antenna Pol.	Reaction of EUT	Remarks	Result
-	rear side	0°	vertical	vertical	no reaction recognized	none	CT / CR
-	left side	90°	horizontal	vertical	no reaction recognized	none	CT / CR
-	front side	180°	horizontal	horizontal	no reaction recognized	none	CT / CR

Remark: Three sides of the setup were tested in each GSM band using double the fieldstrength and each axis was tested at both polarisations where both bands complement each other (opposite sides at complement polarisations). The dwell time at each frequency was set to 2.7 s.

Temperature 26 °C
Air Pressure 1006 hPa
Humidity: 38 %

Test Setup: ☑ Table Top ☐ Floorstanding

Grounding: ☐ With Power Supply ☑ None ☐

Signalling device: CMD55 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G0900V	setup 3	Enclosure	3 V/m, 80-1000 MHz; 1.4-2.7 GHz; 80% AM, log 1%

Diagram No.	Radiation to	Turntable Position	EUT Pos.	Antenna Pol.	Reaction of EUT	Remarks	Result
03-07	front side	180°	horizontal	vertical	no reaction recognized	none	CT / CR
03-08	right side	90°	horizontal	vertical	no reaction recognized	none	CT / CR
03-09	rear side	0°	horizontal	horizontal	no reaction recognized	none	CT / CR
03-10	top side	180°	vertical	horizontal	no reaction recognized	none	CT / CR
03-10	left side	270°	horizontal	horizontal	no reaction recognized	none	CT / CR
03-11	bottom side	0°	vertical	vertical	no reaction recognized	none	CT / CR

Remark: Six sides of the setup were tested in each GSM band in a way that the tests in both bands complement each other in order to obtain the complete number of combinations of tested sides and antenna polarisations. The dwell time at each frequency was set to 2.7 s.

Temperature 22 °C
Air Pressure 1003 hPa
Humidity: 32%

Test Setup: ☑ Table Top ☐ Floorstanding

Grounding: ☐ With Power Supply ☑ None ☐

Signalling device: CMU200 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G1800I	setup 3	Enclosure	6 V/m, 80-1000 MHz; 1.4-2.7 GHz; 80% AM, log 1%

Diagram No.	Radiation to	Turntable Position	EUT Pos.	Antenna Pol.	Reaction of EUT	Remarks	Result
-	top side	180°	vertical	horizontal	no reaction recognized	none	CT / CR
-	right side	90°	horizontal	horizontal	no reaction recognized	none	CT / CR
-	rear side	0°	horizontal	vertical	no reaction recognized	none	CT / CR

Remark: Three sides of the setup were tested in each GSM band using double the fieldstrength and each axis was tested at both polarisations where both bands complement each other (opposite sides at complement polarisations). The dwell time at each frequency was set to 2.7 s.

Temperature 26 °C | Test Setup: | Grounding: | Signalling device: | ☑ Airlink
Air Pressure 1006 hPa | ☑ Table Top | ☐ With Power Supply | CMD55 | ☐ Cable Connection
Humidity: 38 % | ☐ Floorstanding | ☑ None
☐

Op. Mode	Setup	Port	Test Parameter
G1800V	setup 3	Enclosure	3 V/m, 80-1000 MHz; 1.4-2.7 GHz; 80% AM, log 1%

Diagram No.	Radiation to	Turntable Position	EUT Pos.	Antenna Pol.	Reaction of EUT	Remarks	Result
03-01	right side	90°	horizontal	horizontal	please see diagram	none	CT / CR
03-02	front side	180°	horizontal	horizontal	please see diagram	none	CT / CR
03-03	rear side	0°	horizontal	vertical	no reaction recognized	none	CT / CR
03-04	left side	270°	horizontal	vertical	no reaction recognized	none	CT / CR
03-05	top side	180°	vertical	vertical	no reaction recognized	none	CT / CR
03-06	bottom side	0°	vertical	horizontal	no reaction recognized	none	CT / CR

Remark: Six sides of the setup were tested in each GSM band in a way that the tests in both bands complement each other in order to obtain the complete number of combinations of tested sides and antenna polarisations. The dwell time at each frequency was set to 2.7 s.

3.6.3 Test result: RF-Electromagnetic Field

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900I	setup 3	Enclosure	**passed**
	G0900V	setup 3	Enclosure	**passed**
	G1800I	setup 3	Enclosure	**passed**
	G1800V	setup 3	Enclosure	**passed**

3. 7 Fast Transients, "Burst", Power Line

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 61000-4-4 +A1 2004/2010

3.7.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.7.2 Test Protocol

Temperature 23 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1011 hPa	☑ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 37 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G0900V	setup 1	AC Power Supply Port	1 kV, 5 kHz

Test Voltage	Rep. F	Reaction	Remarks	Result
+0.5 kV	5 kHz	no reaction recognized	none	TT / TR
+1 kV	5 kHz	no reaction recognized	none	TT / TR
-0.5 kV	5 kHz	no reaction recognized	none	TT / TR
-1 kV	5 kHz	no reaction recognized	none	TT / TR

Remark: none

Temperature 23 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 984 hPa	☑ Table Top	☐ With Power Supply	CMD55	☐ Cable Connection
Humidity: 32 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G1800I	setup 1	AC Power Supply Port	1 kV, 5 kHz

Test Voltage	Rep. F	Reaction	Remarks	Result
+0.5 kV		no reaction recognized	none	TT / TR
+1 kV		no reaction recognized	none	TT / TR
-0.5 kV		no reaction recognized	none	TT / TR
-1 kV		no reaction recognized	none	TT / TR

Remark: none

3.7.3 Test result: Fast Transients, "Burst", Power Line

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900V	setup 1	AC Power Supply Port	**passed**
	G1800I	setup 1	AC Power Supply Port	**passed**

3. 8 Fast transients, "Burst", Signal Lines

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 61000-4-4 +A1 2004/2010

3.8.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.8.2 Test Protocol

Temperature 23 °C | Air Pressure 1017 hPa | Humidity: 37 %
Test Setup: ☑ Table Top ☐ Floorstanding ☐
Grounding: ☐ With Power Supply ☑ None
Signalling device: CMU200 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G0900I	setup 1	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	0,5 kV, 5 kHz

Test Voltage	Rep. F	Reaction	Remarks	Result
+0.5 kV	5 kHz	no reaction recognized	none	TT / TR
-0.5 kV	5 kHz	no reaction recognized	none	TT / TR

Remark: none

Temperature 23 °C | Air Pressure 1017 hPa | Humidity: 37 %
Test Setup: ☑ Table Top ☐ Floorstanding ☐
Grounding: ☐ With Power Supply ☑ None
Signalling device: CMU200 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G0900V	setup 1	GSM Antenna Port (ANT)	0,5 kV, 5 kHz

Test Voltage	Rep. F	Reaction	Remarks	Result
+0.5 kV	5 kHz	no reaction recognized	none	TT / TR
-0.5 kV	5 kHz	no reaction recognized	none	TT / TR

Remark: none

Temperature 23 °C | Air Pressure 1017 hPa | Humidity: 37 %
Test Setup: ☑ Table Top ☐ Floorstanding ☐
Grounding: ☐ With Power Supply ☑ None
Signalling device: CMU200 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G1800I	setup 1	GSM Antenna Port (ANT)	0,5 kV, 5 kHz

Test Voltage	Rep. F	Reaction	Remarks	Result
+0.5 kV	5 kHz	no reaction recognized	none	TT / TR
-0.5 kV	5 kHz	no reaction recognized	none	TT / TR

Remark: none

Temperature 23 °C | Air Pressure 1017 hPa | Humidity: 37 %
Test Setup: ☑ Table Top ☐ Floorstanding ☐
Grounding: ☐ With Power Supply ☑ None
Signalling device: CMU200 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G1800V	setup 1	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	0,5 kV, 5 kHz

Test Voltage	Rep. F	Reaction	Remarks	Result
+0.5 kV	5 kHz	no reaction recognized	none	TT / TR
-0.5 kV	5 kHz	no reaction recognized	none	TT / TR

Remark: none

3.8.3 Test result: Fast transients, "Burst", Signal Lines

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900I	setup 1	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	**passed**
	G0900V	setup 1	GSM Antenna Port (ANT)	**passed**
	G1800I	setup 1	GSM Antenna Port (ANT)	**passed**
	G1800V	setup 1	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	**passed**

3. 9 Surge, Power Line

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 61000-4-5 2006

3.9.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.9.2 Test Protocol

Temperature 23 °C
Air Pressure 984 hPa
Humidity: 32 %

Test Setup:
☐ Table Top
☐ Floorstanding

Grounding:
☐ With Power Supply
☑ None
☐

Signalling device: CMD55

☑ Airlink
☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G0900I	setup 1	AC Power Supply Port	1 kV / 2 kV

Coupling	Test Voltage	Angle	Reaction of EUT	Remarks	Result
L1=>N	+0.5 kV	0°,90°,180°,270°	no reaction recognized	none	TT / TR
L1=>N	+1 kV	0°,90°,180°,270°	no reaction recognized	none	TT / TR
L1=>N	-0.5 kV	0°,90°,180°,270°	no reaction recognized	none	TT / TR
L1=>N	-1 kV	0°,90°,180°,270°	no reaction recognized	none	TT / TR

Remark: none

Temperature 23 °C
Air Pressure 1011 hPa
Humidity: 37 %

Test Setup:
☐ Table Top
☐ Floorstanding

Grounding:
☐ With Power Supply
☑ None
☐

Signalling device: CMU200

☑ Airlink
☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G1800V	setup 1	AC Power Supply Port	1 kV / 2 kV

Coupling	Test Voltage	Angle	Reaction of EUT	Remarks	Result
L1=>N	+0.5 kV	0°,90°,180°,270°	no reaction recognized	none	TT / TR
L1=>N	+1 kV	0°,90°,180°,270°	no reaction recognized	none	TT / TR
L1=>N	-0.5 kV	0°,90°,180°,270°	no reaction recognized	none	TT / TR
L1=>N	-1 kV	0°,90°,180°,270°	no reaction recognized	none	TT / TR

Remark: none

3.9.3 Test result: Surge, Power Line

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900I	setup 1	AC Power Supply Port	**passed**
	G1800V	setup 1	AC Power Supply Port	**passed**

3. 10 Surge, Telecommunication Line

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 61000-4-5 2006

3.10.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.10.2 Test Protocol

Temperature 24 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1024 hPa	☐ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 45 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G0900V	setup 2	Analogue Emergency-Call Telephone Port (LINE)	0,5 kV / 1 kV

Coupling	Test Voltage	Angle	Reaction of EUT	Remarks	Result
+ => -	+0.5 kV	-	no reaction recognized	none	TT / TR
+ => -	+1 kV	-	no reaction recognized	none	TT / TR
+ => -	-0.5 kV	-	no reaction recognized	none	TT / TR
+ => -	-1 kV	-	no reaction recognized	none	TT / TR

Remark: The test was performed in the laboratory of EMC Competence Center Düsseldorf, Germany, by a 7 layers' engineer.

Temperature 24 °C	Test Setup:	Grounding:	Signalling device:	☑ Airlink
Air Pressure 1024 hPa	☐ Table Top	☐ With Power Supply	CMU200	☐ Cable Connection
Humidity: 45 %	☐ Floorstanding	☑ None		
		☐		

Op. Mode	Setup	Port	Test Parameter
G1800I	setup 2	Analogue Emergency-Call Telephone Port (LINE)	0,5 kV / 1 kV

Coupling	Test Voltage	Angle	Reaction of EUT	Remarks	Result
+ => -	+0.5 kV	-	no reaction recognized	none	TT / TR
+ => -	+0.5 kV	-	no reaction recognized	none	TT / TR
+ => -	+1 kV	-	no reaction recognized	none	TT / TR
+ => -	-0.5 kV	-	no reaction recognized	none	TT / TR
+ => -	-1 kV	-	no reaction recognized	none	TT / TR

Remark: The test was performed in the laboratory of EMC Competence Center Düsseldorf, Germany, by a 7 layers' engineer.

3.10.3 Test result: Surge, Telecommunication Line

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900V	setup 2	Analogue Emergency-Call Telephone Port (LINE)	**passed**
	G1800I	setup 2	Analogue Emergency-Call Telephone Port (LINE)	**passed**

3. 11 RF Common Mode, AM, Power Line

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 61000-4-6 2009

3.11.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.11.2 Test Protocol

Temperature 23 °C	Test Setup:	Grounding:	Signalling device: ☑ Airlink
Air Pressure 1017 hPa	☑ Table Top	☐ With Power Supply	CMD55 ☐ Cable Connection
Humidity: 37 %	☐ Floorstanding	☑ None	
		☐	

Op. Mode	Setup	Port	Test Parameter
G0900V	setup 1	AC Power Supply Port	3 V, 80% AM, 150 kHz - 80 MHz, log 1%

Diag. No.	Used Coupl. Device	Loc. on Port	Termination	Reaction of EUT	Remarks	Result
06-02	CDN M2	near EUT	CDN S1	please see diagram	none	CT / CR

Remark: none

Temperature 23 °C	Test Setup:	Grounding:	Signalling device: ☑ Airlink
Air Pressure 984 hPa	☑ Table Top	☐ With Power Supply	CMD55 ☐ Cable Connection
Humidity: 32 %	☐ Floorstanding	☑ None	
		☐	

Op. Mode	Setup	Port	Test Parameter
G1800I	setup 1	AC Power Supply Port	3 V, 80% AM, 150 kHz - 80 MHz, log 1%

Diag. No.	Used Coupl. Device	Loc. on Port	Termination	Reaction of EUT	Remarks	Result
-	CDN M2	near EUT	CDN S1	no reaction recognized	none	CT / CR

Remark: none

3.11.3 Test result: RF Common Mode, AM, Power Line

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900V	setup 1	AC Power Supply Port	**passed**
	G1800I	setup 1	AC Power Supply Port	**passed**

3. 12 RF Common Mode, AM, Signal Line

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 61000-4-6 2009

3.12.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.12.2 Test Protocol

Temperature 23 °C
Air Pressure 984 hPa
Humidity: 32 %

Test Setup: ☑ Table Top ☐ Floorstanding

Grounding: ☐ With Power Supply ☑ None ☐

Signalling device: CMD55 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G0900I	setup 1	GSM Antenna Port (ANT)	3 V, 80% AM, 150 kHz - 80 MHz, log 1%

Diag. No.	Used Coupl. Device	Loc. on Port	Termination	Reaction of EUT	Remarks	Result
-	CDN S1	near EUT	CDN M2	no reaction recognized	none	CT / CR

Remark: none

Temperature 21 °C
Air Pressure 1009 hPa
Humidity: 40 %

Test Setup: ☑ Table Top ☐ Floorstanding

Grounding: ☐ With Power Supply ☑ None ☐

Signalling device: CMD55 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G0900V	setup 3	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	3 V, 80% AM, 150 kHz - 80 MHz, log 1%

Diag. No.	Used Coupl. Device	Loc. on Port	Termination	Reaction of EUT	Remarks	Result
06-07	current clamp F120	near EUT	CDN S1	please see diagram	none	CT / CR

Remark: none

Temperature 23 °C
Air Pressure 984 hPa
Humidity: 32 %

Test Setup: ☑ Table Top ☐ Floorstanding

Grounding: ☐ With Power Supply ☑ None ☐

Signalling device: CMD55 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G1800I	setup 1	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	3 V, 80% AM, 150 kHz - 80 MHz, log 1%

Diag. No.	Used Coupl. Device	Loc. on Port	Termination	Reaction of EUT	Remarks	Result
06-01	current clamp F120	near EUT	CDN S1	no reaction recognized	please see diagram	CT / CR

Remark: none

Temperature 27 °C
Air Pressure 1023 hPa
Humidity: 42 %

Test Setup: ☑ Table Top ☐ Floorstanding

Grounding: ☐ With Power Supply ☑ None ☐

Signalling device: CMD55 ☑ Airlink ☐ Cable Connection

Op. Mode	Setup	Port	Test Parameter
G1800V	setup 3	GSM Antenna Port (ANT)	3 V, 80% AM, 150 kHz - 80 MHz, log 1%

Diag. No.	Used Coupl. Device	Loc. on Port	Termination	Reaction of EUT	Remarks	Result
06-12	CDN S1	near EUT	CDN M2	please see diagram	none	CT / CR

Remark: please see diagram

3.12.3 Test result: RF Common Mode, AM, Signal Line

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900I	setup 1	GSM Antenna Port (ANT)	**passed**
	G0900V	setup 3	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	**passed**
	G1800I	setup 1	Cable Harness (EXT+READY+LINE+12VOUT+EL+ALM)	**passed**
	G1800V	setup 3	GSM Antenna Port (ANT)	**passed**

3. 13 Voltage Dips, short Interruptions and Variations

Standard: EN 301 489-1 09/2011 v1.9.2 **Basic Standard:** EN 61000-4-11 2004

3.13.1 Test Description

The test set-up was realised according to the used basic standard.
The test was performed according to the used basic standard.
For test setup please see chap. Photo Report.

3.13.2 Test Protocol

Temperature 23 °C	Test Setup:	Grounding:	Signalling device: ☑ Airlink
Air Pressure 1011 hPa	☐ Table Top	☐ With Power Supply	CMU200 ☐ Cable Connection
Humidity: 37 %	☐ Floorstanding	☑ None	
		☐	

Op. Mode	Setup	Port	Test Parameter
G0900V	setup 1	AC Power Supply Port	0%/10ms; 0%/20ms; 70%/0.5s; 0%/5s

Nominal Voltage	T 1	Reduced Voltage	U %	T 2	Rep.	Reaction	Remarks	Result
230 V	10 s	0 V	0	10 ms	10	no reaction recognized	none	TT / TR
230 V	10 s	0 V	0	20 ms	10	no reaction recognized	none	TT / TR
230 V	10 s	161 V	70	0.5 s	10	no reaction recognized	none	TT / TR
230 V	10 s	0 V	0	5 s	10	lights in speaker unit turn off during power fail and on again after power is restored	none	TT / TR

Remark: none

Temperature 23 °C	Test Setup:	Grounding:	Signalling device: ☑ Airlink
Air Pressure 984 hPa	☐ Table Top	☐ With Power Supply	CMD55 ☐ Cable Connection
Humidity: 32 %	☐ Floorstanding	☑ None	
		☐	

Op. Mode	Setup	Port	Test Parameter
G1800I	setup 1	AC Power Supply Port	0%/10ms; 0%/20ms; 70%/0.5s; 0%/5s

Nominal Voltage	T 1	Reduced Voltage	U %	T 2	Rep.	Reaction	Remarks	Result
230 V	10 s	0 V	0	10 ms	10	no reaction recognized	none	TT / TR
230 V	10 s	0 V	0	20 ms	10	no reaction recognized	none	TT / TR
230 V	10 s	161 V	70	0.5 s	10	no reaction recognized	none	TT / TR
230 V	10 s	0 V	0	5 s	10	during the test: LED1 (Level) and LED2 (Batt) switches off and on	none	TT / TR

Remark: none

3.13.3 Test result: Voltage Dips, short Interruptions and Variations

EN 301 489-1	Op. Mode	Setup	Port	Result
	G0900V	setup 1	AC Power Supply Port	**passed**
	G1800I	setup 1	AC Power Supply Port	**passed**

4. Testequipment

Anechoic Chamber

Manufacturer various **Hardware Version**

Serial No. **Software Version**

Equipment	**Type**	**Serial No.**	**Manufacturer**	**Hardware**	**Software**
Air Compressor (pneumatic)			Atlas Copco		
Controller	MCU	961208	Maturo GmbH		
Controller (old)	CO 2000	CO2000/328/1247 0406/L	Innco innovative constructions GmbH		
	HD 100	100/603	HD GmbH H. Deisel		
EMC Camera	CE-CAM/1		CE-SYS		
EMC Camera for observation of EUT	CCD-400E	0005033	Mitsubishi		
Filter ISDN	B84312-C110-E1		Siemens & Matsushita		
Filter telephone systems / modem	B84312-C40-B1		Siemens & Matsushita		
Filter Universal 1A	B84312-C30-H3		Siemens & Matsushita		
Fully/Semi AE Chamber	10.58x6.38x6.00 m^3		Frankonia		
Turntable	DS 420S	420/573/99	HD GmbH, H. Deisel		
Valve Control Unit (pneum.)	VE 615P	615/348/99	HD GmbH, H. Deisel		

Auxiliary Test Equipment

Manufacturer various **Hardware Version**

Serial No. **Software Version**

Equipment	**Type**	**Serial No.**	**Manufacturer**	**Hardware**	**Software**
Broadband Resist. Power Divider N	1506A / 93459	LM390	Weinschel		
Broadband Resist. Power Divider SMA	1515 / 93459	LN673	Weinschel		
Digital Multimeter 01	Voltcraft M-3860M	IJ096055	Conrad		
Digital Multimeter 02	Voltcraft M-3860M	IJ095955	Conrad		
Digital Multimeter 03	Fluke 177	86670383	Fluke Europe B.V.		
Digital Oscilloscope	TDS 784C	B021311	Tektronix		
Fibre optic link Satellite	FO RS232 Link	181-018	Pontis		
Fibre optic link Transceiver	FO RS232 Link	182-018	Pontis		
I/Q Modulation Generator	AMIQ-B1	832085/018	Rohde & Schwarz		
Notch Filter ultra stable	WRCA800/960-6EEK	24	Wainwright		
Signal Analyser 26 GHz	FSIQ26	840061/005	Rohde & Schwarz		
Spectrum Analyzer 9 kHz to 3 GHz	FSP3	838164/004	Rohde & Schwarz		
	FSP3	836277/011	Rohde & Schwarz		
Temperature Chamber	KWP 120/70	59226012190010	Weiss		
	S-1.2C-B	393/25-1389-27RF	Thermotron		
	VT 4002	58566002150010	Vötsch		
ThermoHygro Datalogger 03	Opus10 THI (8152.00)	7482	Lufft Mess- und Regeltechnik GmbH		
ThermoHygro_01	430202		Fischer		

Click Noise -

Manufacturer **Hardware Version**

Serial No. **Software Version**

Equipment	**Type**	**Serial No.**	**Manufacturer**	**Hardware**	**Software**
Four-Line V-Network	ESH2-Z5	7A-0261	Rohde & Schwarz		
Test Receiver	ESCS 30	7A-00235	Rohde & Schwarz		

EMI Conducted Auxiliary Equipment

Manufacturer	various	**Hardware Version**	
Serial No.		**Software Version**	

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Cable "LISN to ESI"	RG214	W18.03+W48.03	Huber + Suhner		
Coupling-Decoupling-Network	ENY41	100002	Rohde & Schwarz		
DC V-Network	ESH 3-Z6	100489	Rohde & Schwarz		
Two-Line V-Network	ESH 3-Z5	828304/029	Rohde & Schwarz		
	ESH 3-Z5	829996/002	Rohde & Schwarz		

EMI Radiated Auxiliary Equipment

Manufacturer	various	**Hardware Version**	
Serial No.		**Software Version**	

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Antenna mast 4m	MA 240	240/492	HD GmbH H. Deisel		
Biconical dipole	VUBA 9117	9117108	Schwarzbeck		
Broadband Amplifier 18MHz-26GHz	JS4-18002600-32-5P	849785	Miteq		
Broadband Amplifier 30MHz-18GHz	JS4-00101800-35-5P	896037	Miteq		
Broadband Amplifier 45MHz-27GHz	JS4-00102600-42-5A	619368	Miteq		
Cable "ESI to EMI Antenna"	EcoFlex10	W18.01-2+W38.01-2	Kabel Kusch		
	RTK081+Aircell7	W18.01+W38.01a	Huber + Suhner		
Cable "ESI to Horn Antenna"	RTK 081	W18.04+3599/001	Rosenberger		
	UFB311A+UFB293 C	W18.02-2+W38.02-2	Rosenberger-Microcoax		
Double-ridged horn	HF 906	357357/002	Rohde & Schwarz		
	HF 906	357357/001	Rohde & Schwarz		
High Pass Filter	4HC1600/12750-1.5-KK	9942011	Trilithic		
	5HC2700/12750-1.5-KK	9942012	Trilithic		
	5HC3500/12750-1.2-KK	200035008	Trilithic		
KUEP pre amplifier	Kuep 00304000	001	7layers		
Log.-per. Antenna	HL 562 Ultralog	830547/003	Rohde & Schwarz		
Loop Antenna	HFH2-Z2	829324/006	Rohde & Schwarz		
Pyramidal Horn Antenna 26,5 GHz	Model 3160-09	9910-1184	EMCO		

EMI Test System

Manufacturer	Rohde&Schwarz	**Hardware Version**	
Serial No.		**Software Version**	for EN 55022: ES-K1 Ver. 1.71 SP2

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Comparison Noise Emitter	CNE III	99/016	York		
EMI Analyzer	ESI 26	830482/004	Rohde & Schwarz	3.3	2.08
Signal Generator	SMR 20	846834/008	Rohde & Schwarz		

EMS Conducted Test System TS9986

Manufacturer	Rohde & Schwarz	**Hardware Version**	
Serial No.		**Software Version**	EMS-K1 V1.20

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
10-V Insertion Unit	URV5-Z2	829384/049	Rohde & Schwarz		
100-V Insertion Unit	URV5-Z4	829212/015	Rohde & Schwarz		
Attenuator, 20dB	10-A-MFN-20	9823	Biro		
Attenuator, 6dB	150-A-FFN-06	9851	Biro		
Cable CPPA1 (Amplifier to 'CDN')	RG214	W61.01+W51.01	Huber + Suhner		
Calibration Fixture	BCICF-4	126	FCC		
CDN 50 to 150 Ohm adapter	L-CR 100 A	143	Lüthi		
CDN-Adapter Short f. Calibration	1072.2358.00		Rohde & Schwarz		
Coaxial Resistor	100-T-FN	9915	Biro		
Coupling-Decoupling-Network	CDN 801-S1	1692	Lüthi		
	ENY41	100002	Rohde & Schwarz		
Coupling-Decoupling-Network (CDN01)	CDN 801-M2/M3	948	Lüthi		
Coupling-Decoupling-Network (CDN02)	CDN 801-M2/M3	1723	Lüthi		
Passive Impedance Adapter	801-150-50-BCI	276	FCC		
	801-150-50-BCI	275	FCC		
Power Amplifier	BSA 0122-100	994618A	Bonn Elektronik		
RF Millivoltmeter	URV 5	828999/025	Rohde & Schwarz		
RF Current Clamp (BCI)	F-120-9A	127	FCC		
RF Current Probe (BCI)	F-52	68	FCC		
Signal Generator	SMY 01	829552/028	Rohde & Schwarz		

EMS Radiated Test System TS9981

Manufacturer Rohde & Schwarz **Hardware Version**

Serial No. **Software Version** EMS-K1 V1.20

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Cable Amplifier to HL46 Antenna	-	-	7 Layers		
Cable Amplifier to HL906 Antenna	-	-	7 Layers		
Cable CPPA2 (Amplifier to Antenna)	RG214	W11.01+W31.01	Huber + Suhner		
E-Field Probe (for EMR-200)	Typ-8	N-0028	Wandel & Goltermann	8.2	3.00
EM Radiation Meter	EMR-200	R-0071	Wandel & Goltermann		
Load Resistor 50 Ohm	8141, 2.5 GHz, 250 W	11737	Bird		
Log.-per. Antenna	HL 046	337201/010	Rohde & Schwarz		
Peak Power Sensor 50 Ohm	NRV-Z32	830914/014	Rohde & Schwarz		
	NRV-Z32	830914/013	Rohde & Schwarz		
Power Amplifier	BLMA 1020-25	035360	Bonn		
	BLMA 2040-20	087106	Bonn		
	BLWA 0810-160/50	994618B	Bonn		
Powermeter	NRVS	831308/007	Rohde & Schwarz		
	NRVS	831308/005	Rohde & Schwarz		
Pulse Converter (for SMY02)	TS-CNV	338722/016	Rohde & Schwarz		
Signal Generator	SME03	836169/049	Rohde & Schwarz		
	SMY02	829309/018	Rohde & Schwarz		

EMS Transient Test System UCS 500-M

Manufacturer EM Test **Hardware Version** none

Serial No. see single devices **Software Version** none

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Capacitive coupling clamp	HFK				
Coupling network EMC Competence Center Dsseldorf	CNV 508	7A-00231	EM Test		
ESD Gun	P 18	0499-40	EM Test		
Multi-Tester	UCS-500 M4	0499-40	EM Test	V 1.30	SWN 001284
Single-phase transformer	V 4070	C99380	EM Test		
	V 4780 S2	0207-24	EM Test		
Surge-Generator EMC Competence Center Dsseldorf	PSurge 4010	7A-00138	Haefely Trench		

EUT Audio Monitoring System

Manufacturer			**Hardware Version**		
Serial No.			**Software Version**		

Equipment	**Type**	**Serial No.**	**Manufacturer**	**Hardware**	**Software**
Audio Analyzer	UPL	830768/015	Rohde & Schwarz	B6, B8, B10	2.01
Dual Microphone Supply	5935	2102432	Bruel & Kjaer		
Microphone	4134	2123631	Bruel & Kjaer		
Microphone Preamplifiers	2669	2152256	Bruel & Kjaer		

EUT Digital Signalling System

Manufacturer			**Hardware Version**		
Serial No.			**Software Version**		

Equipment	**Type**	**Serial No.**	**Manufacturer**	**Hardware**	**Software**
Bluetooth Signalling Unit	CBT	100589	Rohde & Schwarz	B55 FPGA Digital: V2.30 FPGA RF: V3.00	CBT V4.61
	CBT (1153.9000.35)	100302	Rohde & Schwarz	B55 FPGA Digital: V2.24 FPGA RF: V3.00	CBT V4.40
Digital Radio Communication Tester	CMD 55	831050/020	Rohde & Schwarz	B4, B41, B5, B6, B61, B19	3.55
GPS Signalling Unit	SMU200A	100912	Rohde & Schwarz	MB: 07.05, FMR: 50.00	FW 02.05.269.77
Signalling Unit for Bluetooth Spurious Emissions	PTW60	100004	Rohde & Schwarz		5.40
Universal Radio Communication Tester	CMU 200	102366	Rohde & Schwarz	B11, B21v14, B21/2, B41, B52v14, B52/2, B53/2, B56v14, B66, B68v3.04	SW: V4.21 / 4.50 FW µP1: v8.50
	CMU 200	837983/052	Rohde & Schwarz	B11, B21v14, B21/2, B41, B52v14, B52/2, B53/2, B54v14, B56v14, B66, B68v3.04, B95	SW: V4.21 FW µP1: v8.50

Harmonics / Flicker Test System 1 -

Manufacturer Spitzenberger & Spies **Hardware Version**

Serial No. - **Software Version**

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Harmonics / Flicker Analyser	B10	7A-00135	Spitzenberger & Spies		
Power Source	PAS 1000	7A-00137	Spitzenberger & Spies		
Variable Oscillator	NA / BI	7A-00136	Spitzenberger & Spies		

Harmonics / Flicker Test System 2

Manufacturer **Hardware Version**

Serial No. - **Software Version**

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Digital Power Analyser	EM Test DPA 503	7A-00315	EM Test		
Flicker Impedance	EM Test AIF 503 N32	7A-00317	EM Test		
Multifunction AC/DC Power Source	EM Test Netwave 20	7A-00316	EM Test		

Power Magnetic Field -

Manufacturer - **Hardware Version**

Serial No. - **Software Version**

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Harmonics / Flicker Analyser	B10	7A-00135	Spitzenberger & Spies		
High Current Generator	Generator HC 1	7A-00157	Mitsubishi		
Magnetic Field Probe	ELT-400	7A-00267	Narda		
Power Source	PAS 1000	7A-00137	Spitzenberger & Spies		
Variable Oscillator	NA / BI	7A-00136	Spitzenberger & Spies		

Transient Car Impulses -

Manufacturer	EM Test	**Hardware Version**	-
Serial No.	-	**Software Version**	

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Burst Simulator	EFT 200	0494-03	EM-Test	-	-
Coupling Network	CNA 200	0594-03	EM-Test		
Load Dump Simulator	LD 200	0195-04	EM-Test		
Mikro Sekunden Simulator	MPG 200	0195-02	EM-Test		
Voltage Drop Simulator	VDS 200 BF1PF	1000-02	EM-Test		

Transient Car Impulses 2

Manufacturer	EM Test	**Hardware Version**	-
Serial No.		**Software Version**	ISMISO V4.15

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Control Software	ISMISO	-	EM Test	-	4.15
Load Dump Simulator	LD 200 B1 S2	V0704102187	EM Test		-
Power Fail System	PFS 200 B3	V0709102292	EM Test		
Pulse Generator	UCS 200 M	V0704102186	EM Test		
Pulse Generator and Power Supply	VDS 200 B3	V0704102185	EM Test		
Shielded Room SK2	-	-	Frankonia		
Signal Generator	Auto Wave	V0704102188	EM Test		

Transient Car Impulses 3 NSG 5500/5600

Manufacturer	Schaffner Electrotest GmbH	**Hardware Version**	
Serial No.		**Software Version**	

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Burst Generator	FT-5530-750-0033r01	18	Schaffner		
DC-Switch	DS5630-750-0053-00	9	Schaffner		
Function Generator	FG5620-750-0051-00	9	Schaffner		
Load Dump Generator	LD5505-750-0045r01	9	Schaffner		
Power Amplifier	PA5640-750-0054-00	13	Schaffner		
Power Amplifier 60V 300/100A	PA5840-300	040505791-3	Schaffner		
Transformer Conducted Coupler	TC5650-750-055-00	10	Schaffner		
Transient Generator	MT5510-750-0034	32	Schaffner		

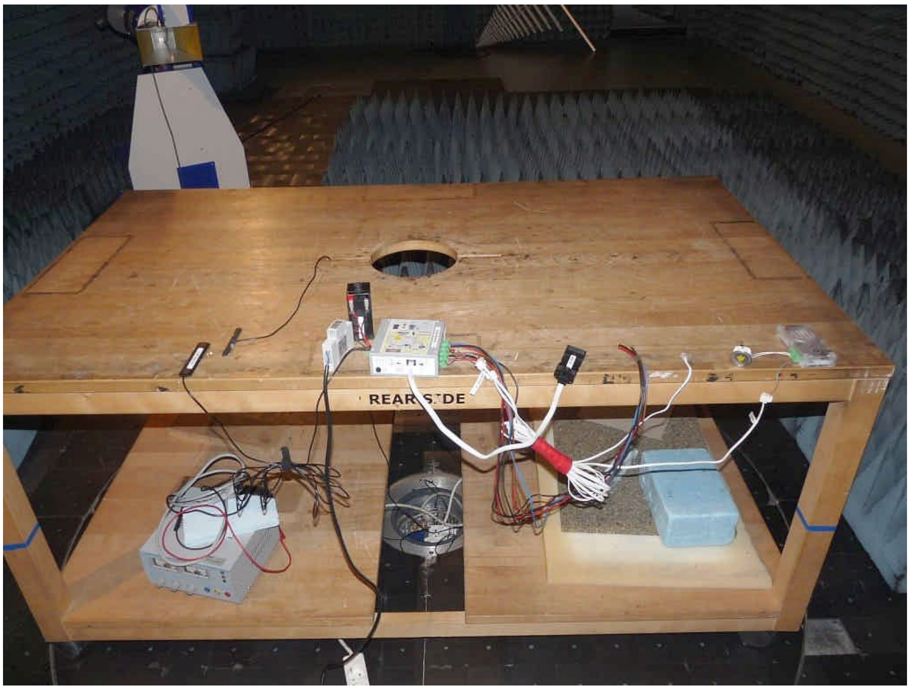
Transient Surge Impulses *PSURGE 4010*

Manufacturer	HAEFELY TRENCH / EM Test	**Hardware Version**	
Serial No.		**Software Version**	

Equipment	Type	Serial No.	Manufacturer	Hardware	Software
Coupling Network (Signal Line)	CNV 508	1000 02	EM TEST	-	-
Generator	PSURGE 4010	583334-03	HAEFELY TRENCH	250 600/00	1.10

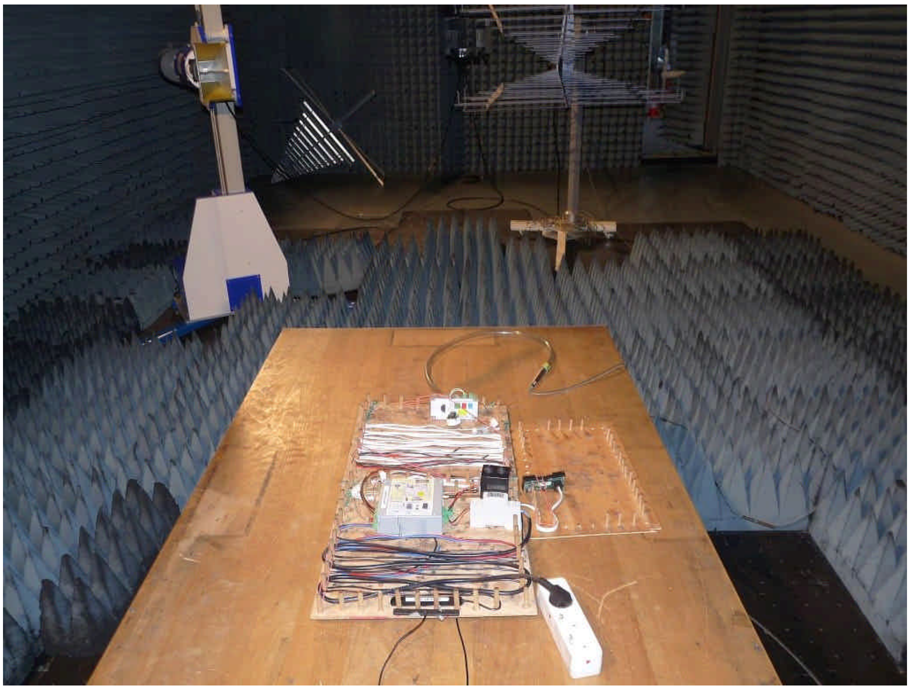
5. Photo Report

Picture 1 : setup for the test "Radiated interference field strength, 30-1000 MHz"

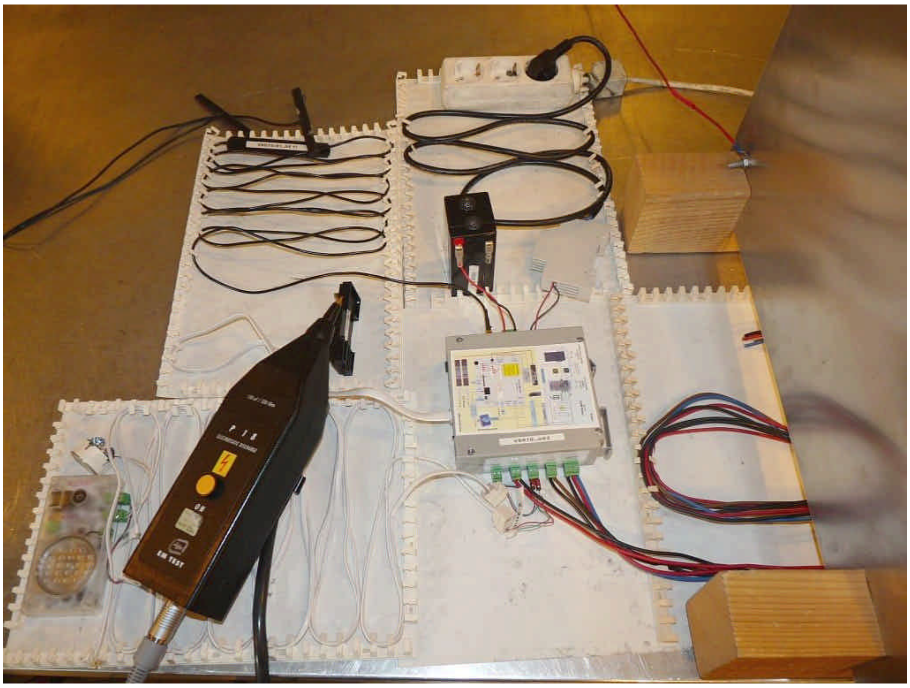


Picture 2 : setup for the test "Radiated interference field strength, 1-6 GHz"

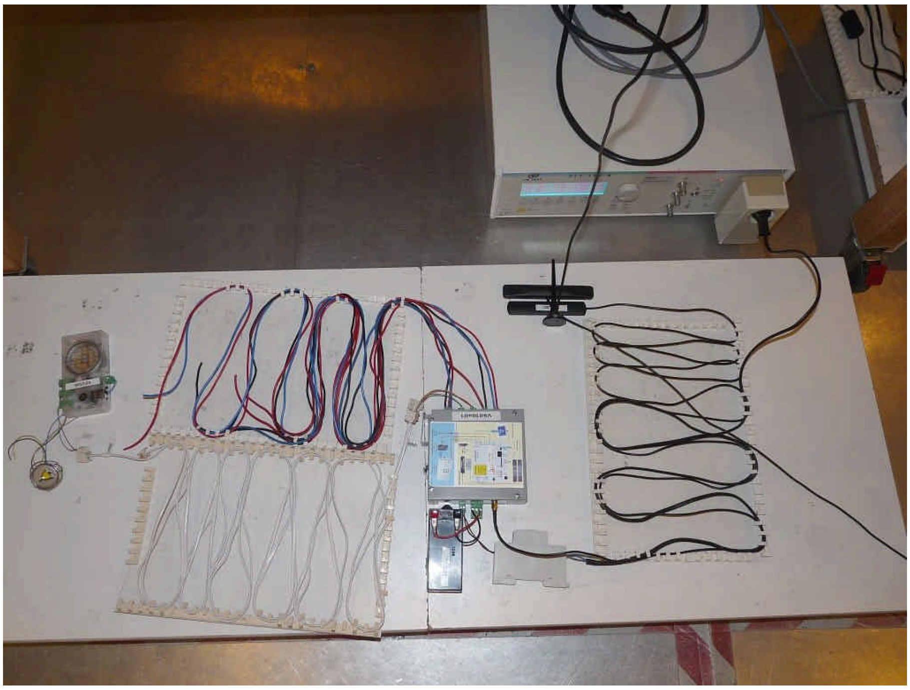
Picture 3 : setup for the test "Conducted interference voltage"



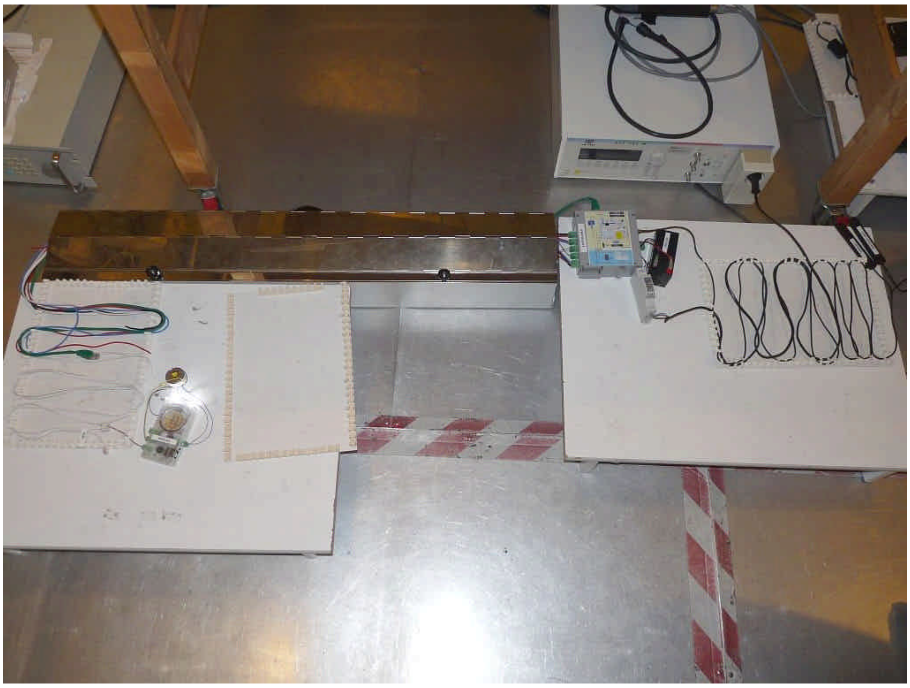
Picture 4 : setup for the test "RF-electromagnetic field"



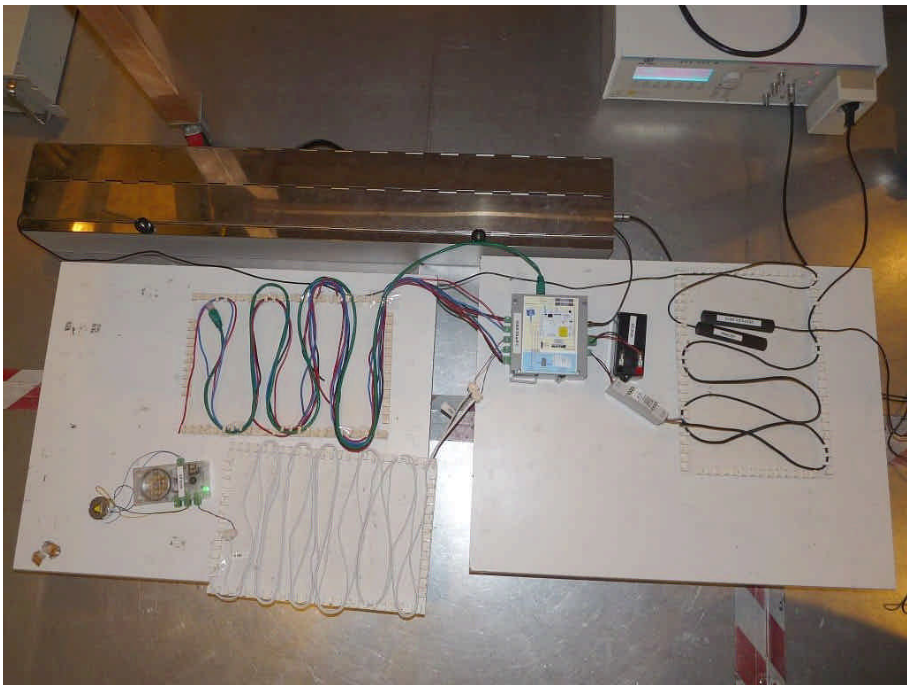
Picture 5 : setup for the test "ESD"



Picture 6 : setup for the test "Burst, Surge, Voltage Dips" (power line)



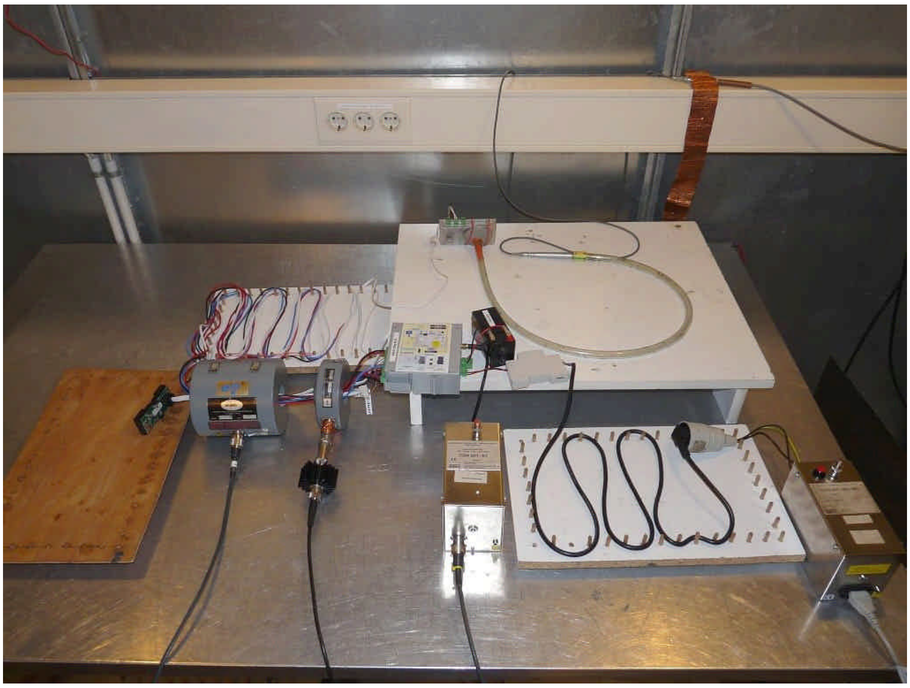
Picture 7 : setup for the test "Burst" (signal line, cable harness)



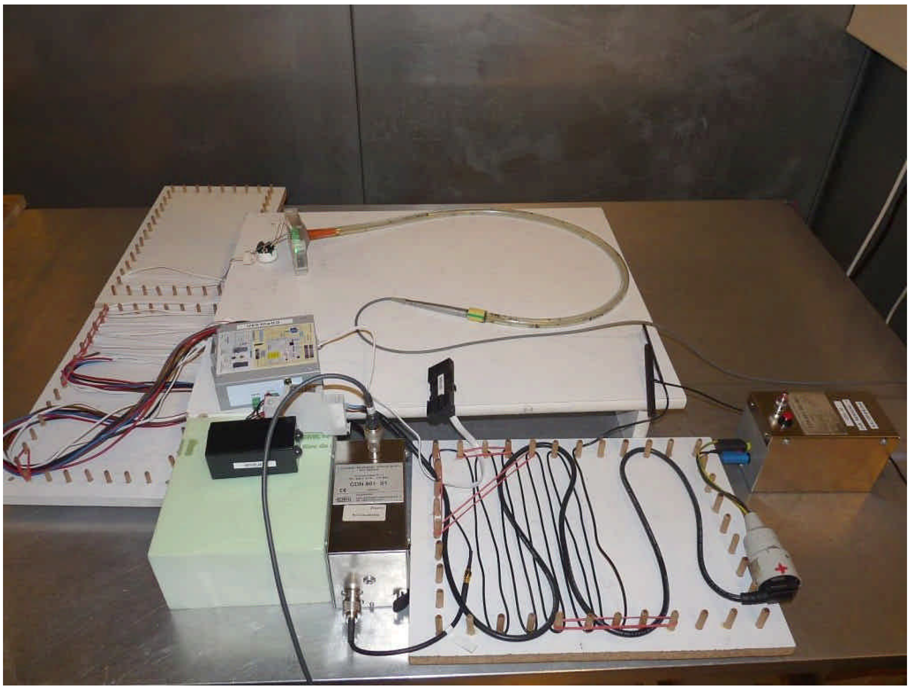
Picture 8 : setup for the test "Burst" (signal line, antenna cable)

Picture 9 : setup for the test "Surge" (telecommunication line)

Picture 10 : setup for the test "RF-common mode" (setup 1)



Picture 11 : setup for the test "RF-common mode" (setup 3, cable harness)



Picture 12 : setup for the test "RF-common mode" (setup 3, antenna cable)

EMI CONDUCTED TEST

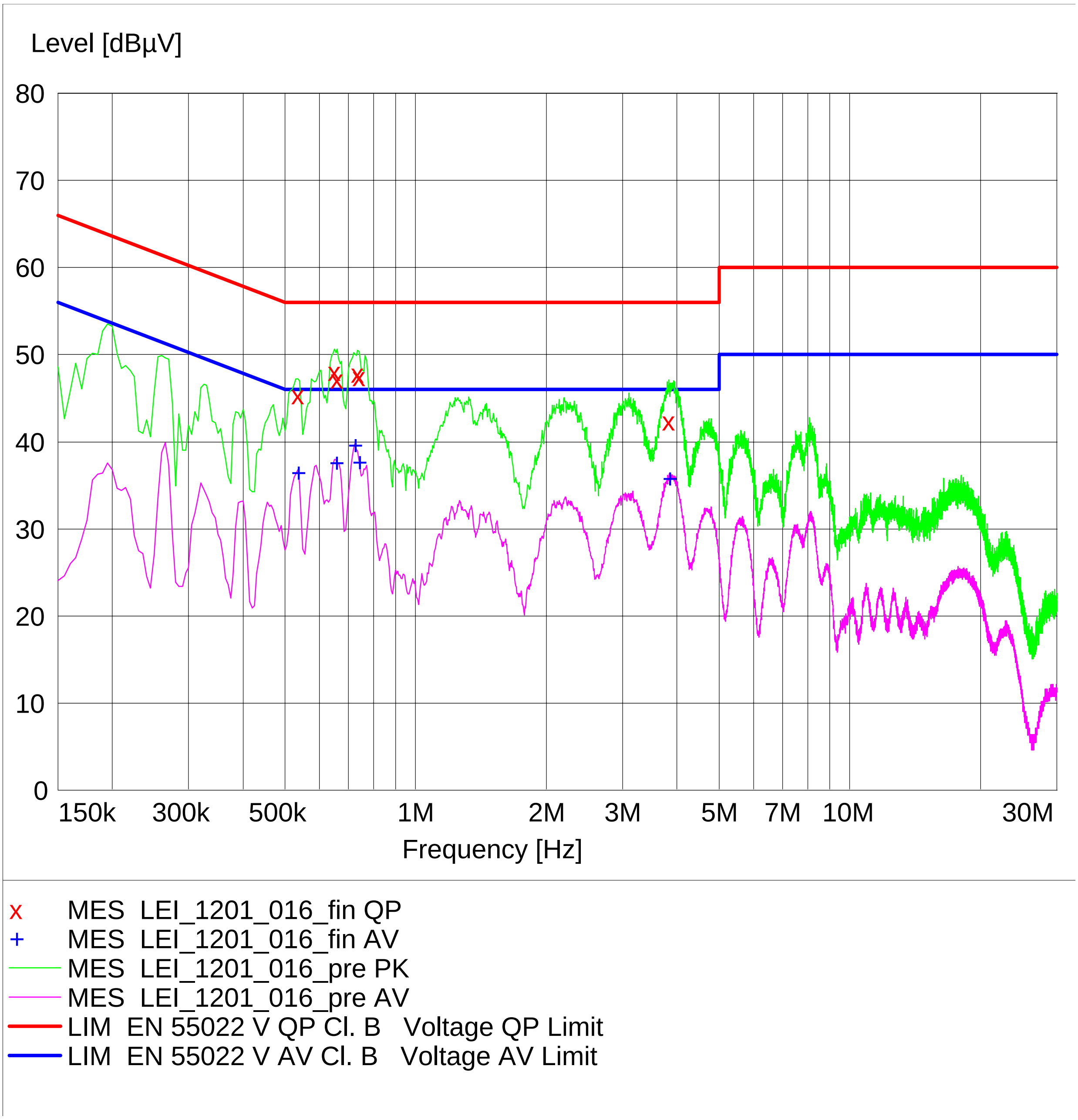
Diagram.: 1.01

EUT:	EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer:	LEITRONIC AG
Operating Condition:	GSM 900 TCH 60
Test Site:	7 layers, Ratingen
Operator:	Gal
Test Specification:	EN 55022 Class B
Comment:	AC Port
Start of Test:	08.07.2013 / 18:31:25

SCAN TABLE: "EN 55022 Voltage"

Short Description: EN 55022 Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	5.0 kHz	MaxPeak Average	20.0 ms	9 kHz	ESH3-Z5



MEASUREMENT RESULT: "LEI_1201_016_fin QP"

08.07.2013 18:41

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.535000	45.40	10.1	56	10.6	N	FLO
0.650000	48.10	10.1	56	7.9	L1	FLO
0.660000	47.20	10.1	56	8.8	L1	FLO
0.735000	47.90	10.1	56	8.1	N	GND
0.740000	47.50	10.1	56	8.5	N	GND
3.830000	42.40	10.2	56	13.6	N	GND

MEASUREMENT RESULT: "LEI_1201_016_fin AV"

08.07.2013 18:41

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.535000	36.50	10.1	46	9.5	L1	GND
0.655000	37.60	10.1	46	8.4	L1	FLO
0.725000	39.60	10.1	46	6.4	N	FLO
0.740000	37.70	10.1	46	8.3	N	GND
3.840000	35.80	10.2	46	10.2	N	FLO

EMI RADIATED TEST

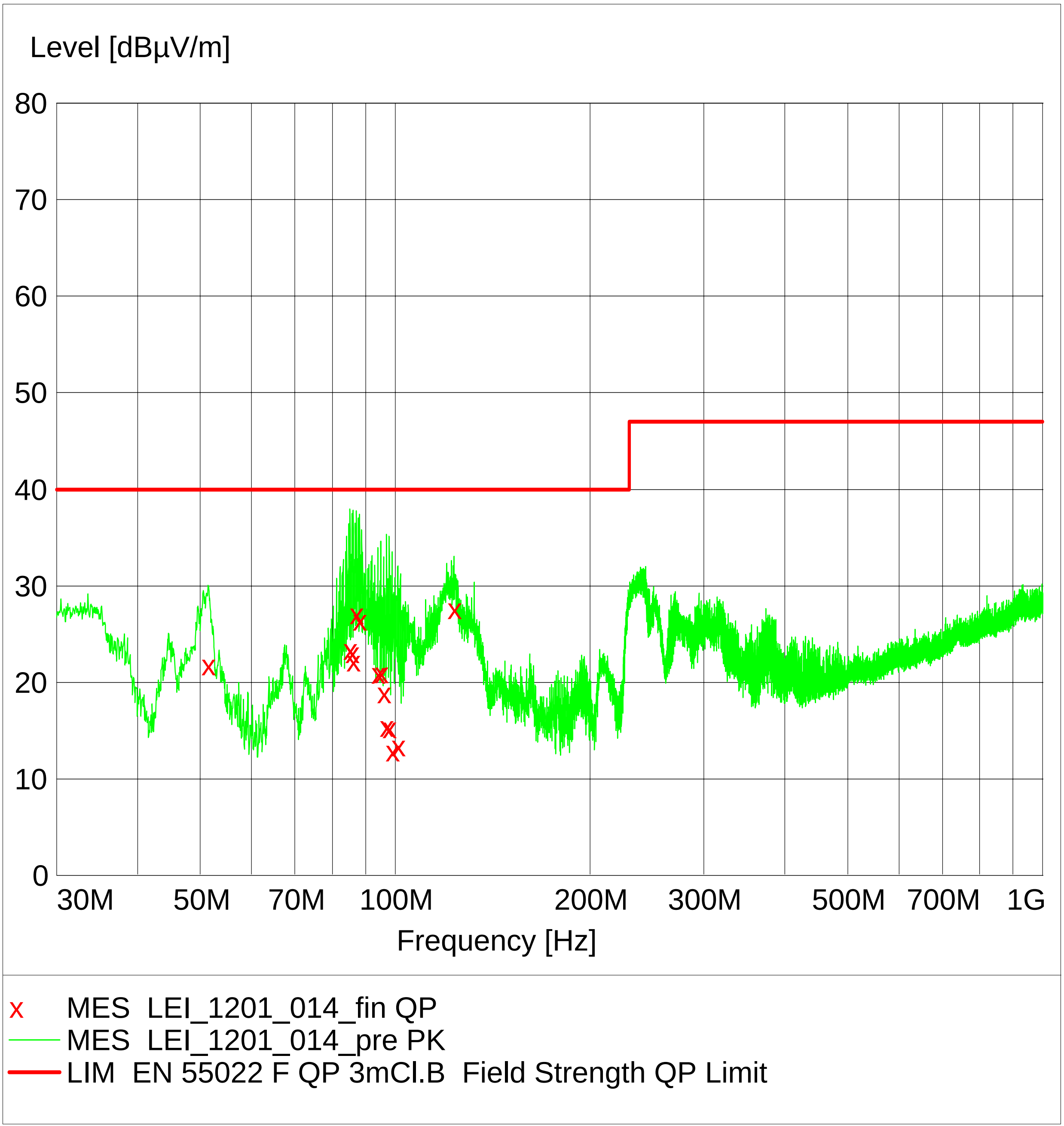
Diagram No.: 2.01

EUT:	EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer:	LEITRONIC AG
Operating Condition:	GSM 1800 TCH 700
Test Site:	7 layers, Ratingen
Operator:	Gal
Test Specification:	EN 55022 Class B
Comment:	Horizontal + vertical antenna polarisation
Start of Test:	04.07.2013 / 18:58:57

SCAN TABLE: "EN 55022 Field"

Short Description: EN 55022 Field Strength

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	60.0 kHz	MaxPeak	1.0 ms	120 kHz	HL562



MEASUREMENT RESULT: "LEI_1201_014_fin QP"

04.07.2013 20:09

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
51.420000	21.80	7.8	40.0	18.2	103.0	337.00	VERTICAL
85.140000	23.40	9.7	40.0	16.6	125.0	11.00	VERTICAL
85.800000	23.10	9.7	40.0	16.9	107.0	0.00	VERTICAL
86.100000	22.20	9.7	40.0	17.8	115.0	22.00	VERTICAL
87.060000	27.10	9.8	40.0	12.9	120.0	338.00	VERTICAL
88.080000	26.40	9.8	40.0	13.6	100.0	22.00	VERTICAL
94.020000	20.90	9.9	40.0	19.1	112.0	22.00	VERTICAL
95.040000	21.00	10.0	40.0	19.0	100.0	22.00	VERTICAL
95.940000	18.90	10.0	40.0	21.1	105.0	20.00	VERTICAL
96.960000	15.40	10.1	40.0	24.6	100.0	13.00	VERTICAL
97.920000	15.30	10.1	40.0	24.7	121.0	22.00	VERTICAL
98.880000	12.90	10.1	40.0	27.1	100.0	22.00	VERTICAL
100.920000	13.40	10.7	40.0	26.6	107.0	338.00	VERTICAL
123.240000	27.60	10.4	40.0	12.4	337.0	292.00	HORIZONTAL

EMISSIONS RADIATED

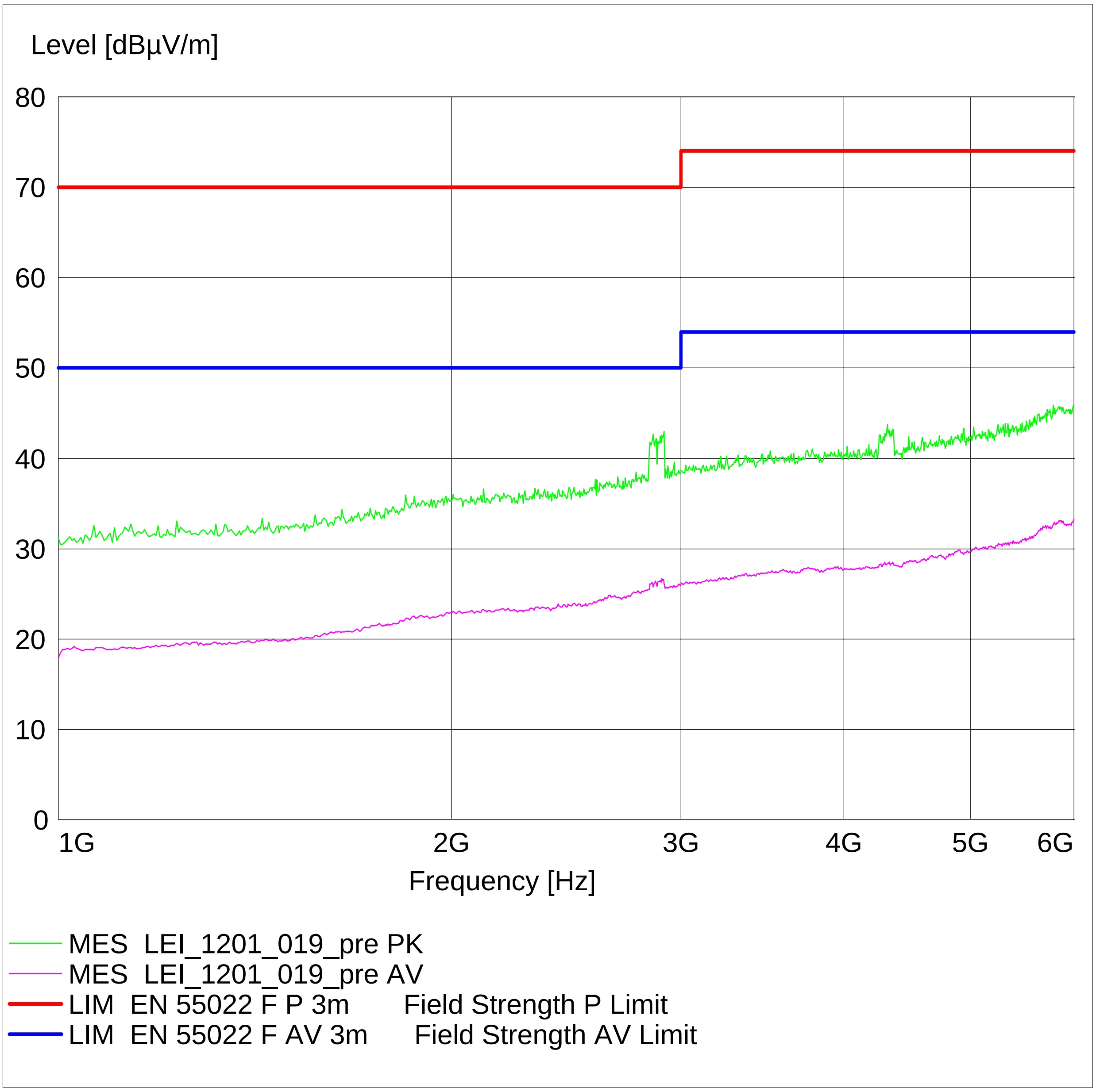
Diagram No.: 2.02

EUT: EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer: LEITRONIC AG
Operating Condition: GSM 900 idle mode
Test Site: 7 layers, Ratingen
Operator: Gal
Test Specification: EN 55022 Class B
Comment:
Start of Test: 08.07.2013 / 21:09:59

SWEEP TABLE: "EN55022 1-6GHz Field"

Short Description: EN 55022 Field Strength

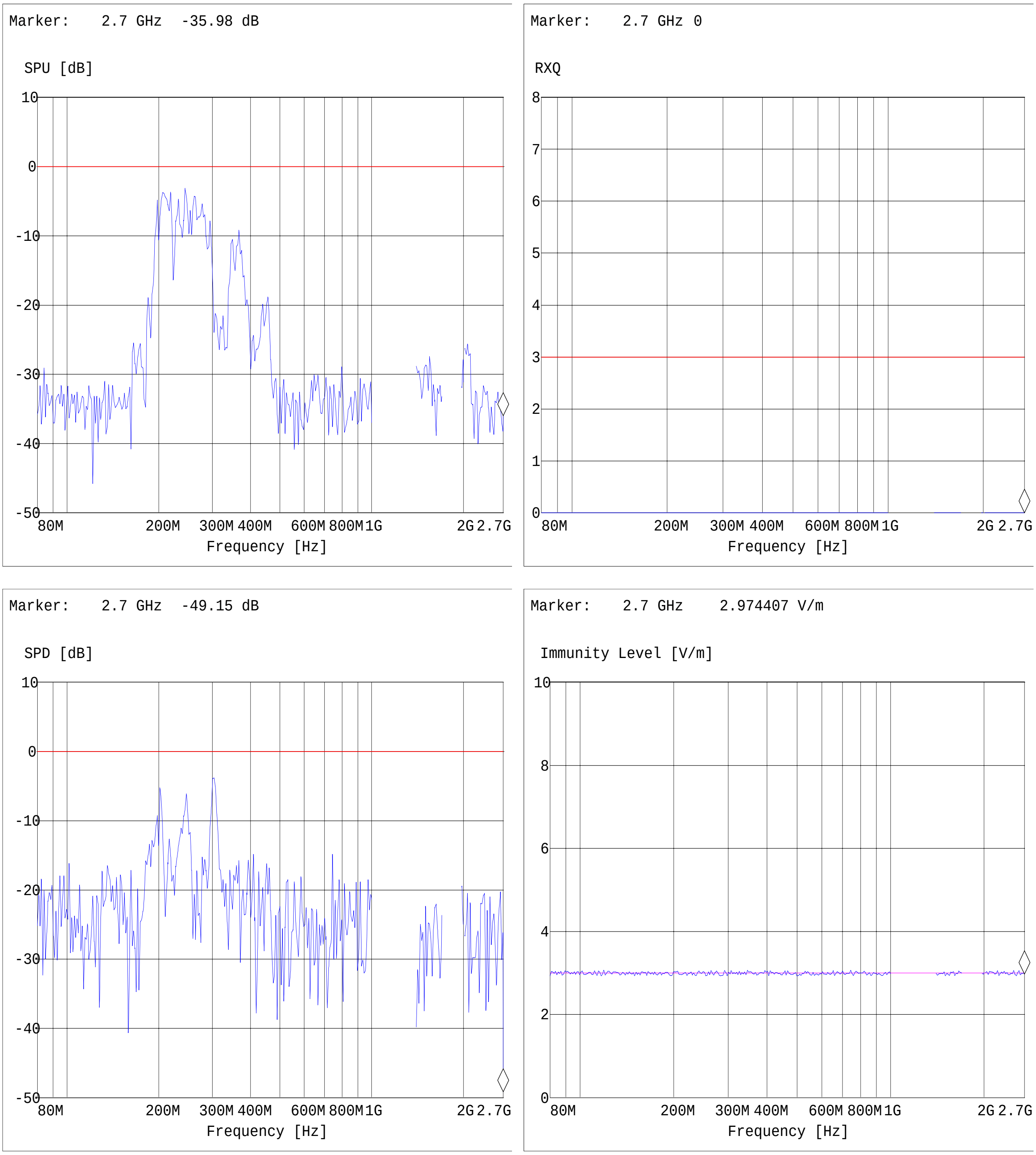
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak Average	30.0 s	1 MHz	HF 906 / 001
3.0 GHz	6.0 GHz	MaxPeak Average	40.0 s	1 MHz	HF 906 / 001



Immunity to RF electromagnetic fields

Diagram No.: 03-01

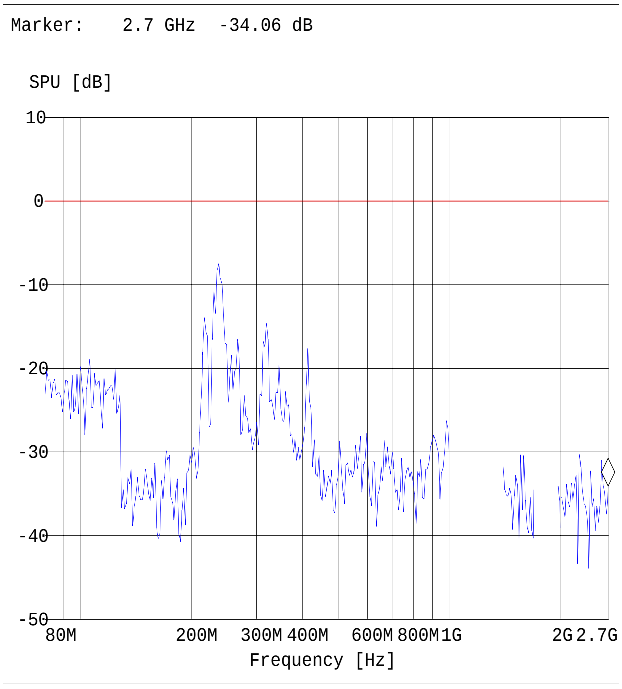
EUT:	EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer:	LEITRONIC AG
Operating Condition:	GSM 1800 TCH 700; max power control level
Test Specification:	EN 61000-4-3 using max hold
Operator:	Doe
Tested Side:	right
Antenna polarisation:	horizontal
EUT position:	horizontal

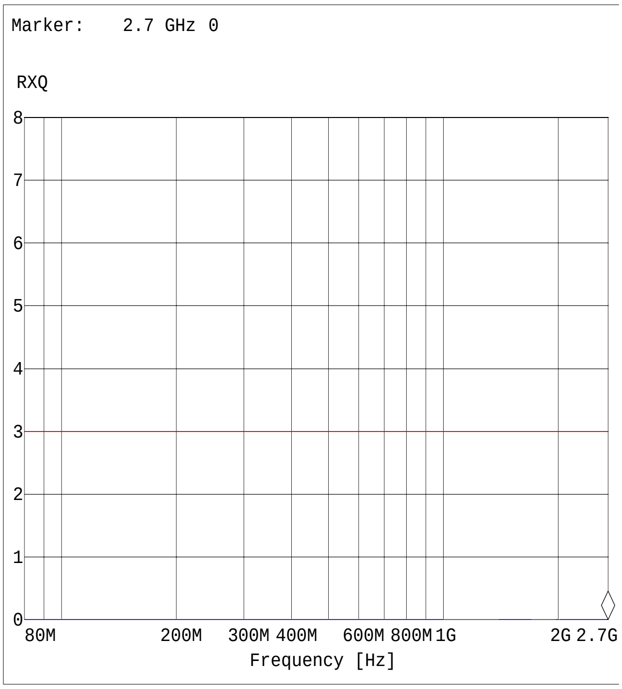


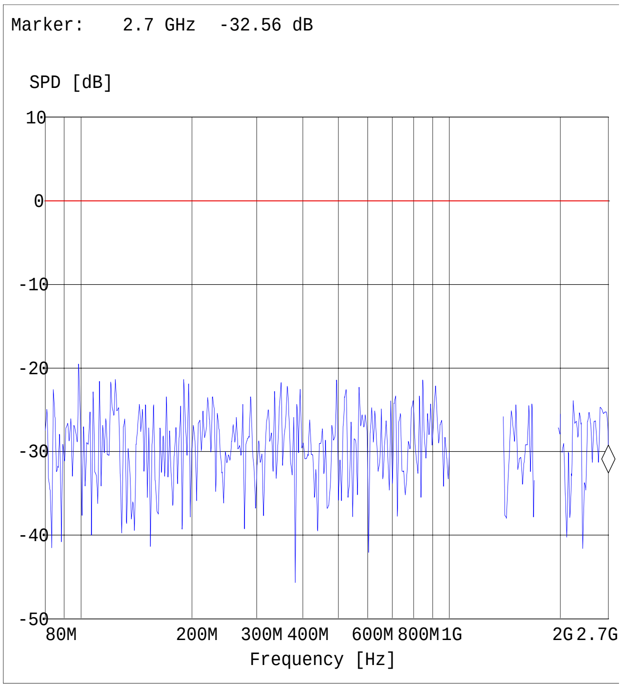
Immunity to RF electromagnetic fields

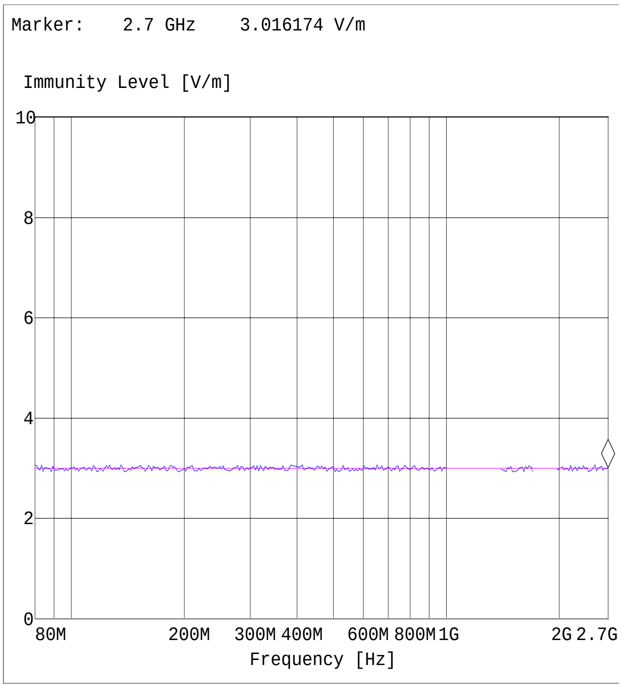
Diagram No.: 03-02

EUT: EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer: LEITRONIC AG
Operating Condition: GSM 1800 TCH 700; max power control level
Test Specification: EN 61000-4-3 using max hold
Operator: Doe
Tested Side: front
Antenna polarisation: horizontal
EUT position: horizontal





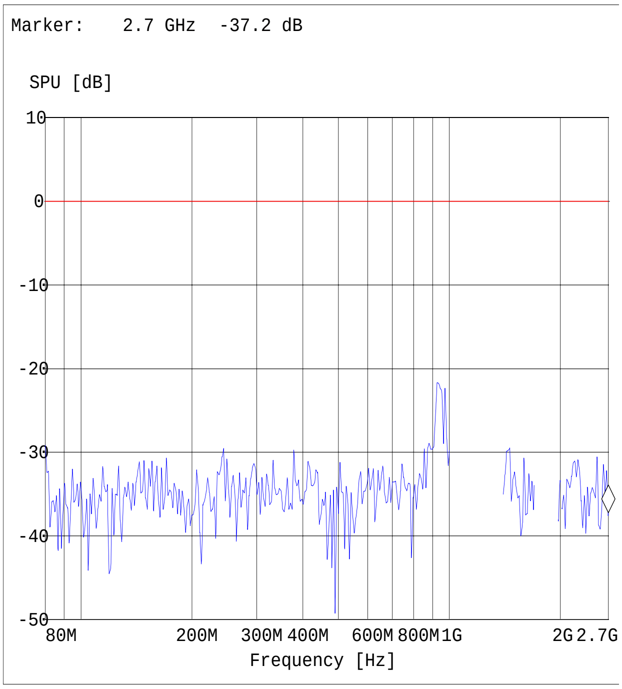


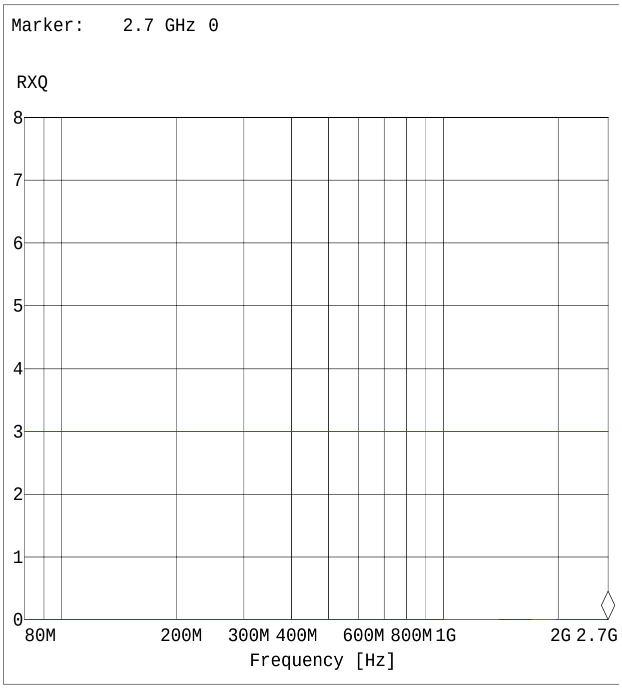


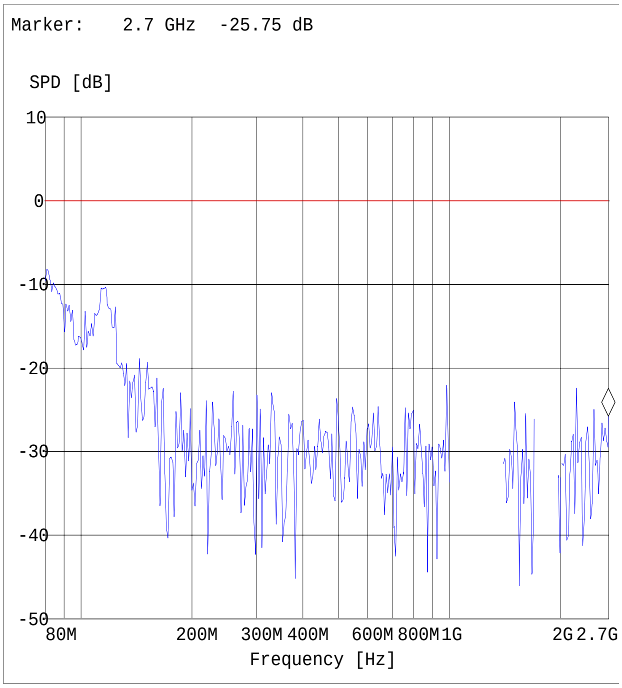
Immunity to RF electromagnetic fields

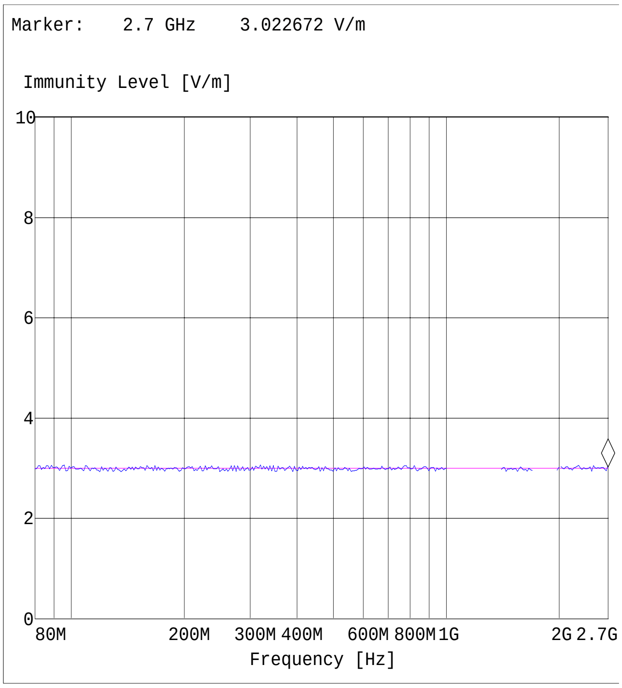
Diagram No.: 03-03

EUT: EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer: LEITRONIC AG
Operating Condition: GSM 1800 TCH 700; max power control level
Test Specification: EN 61000-4-3 using max hold
Operator: Doe
Tested Side: rear
Antenna polarisation: vertical
EUT position: horizontal





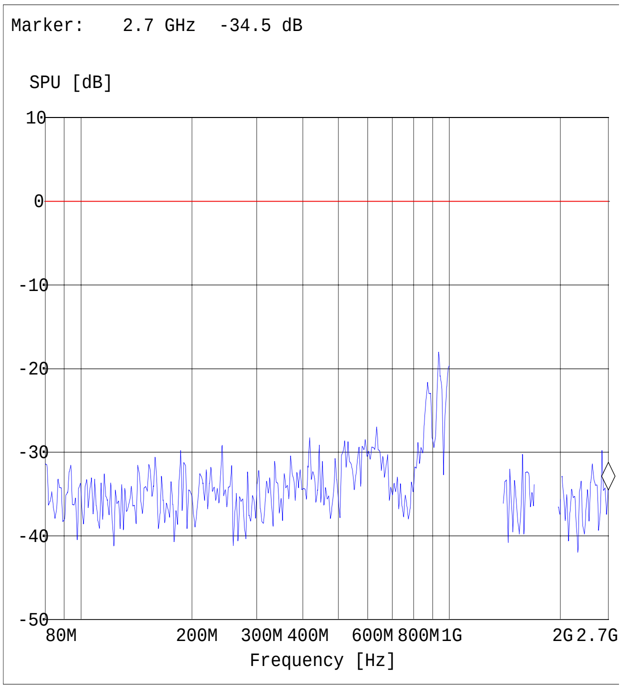


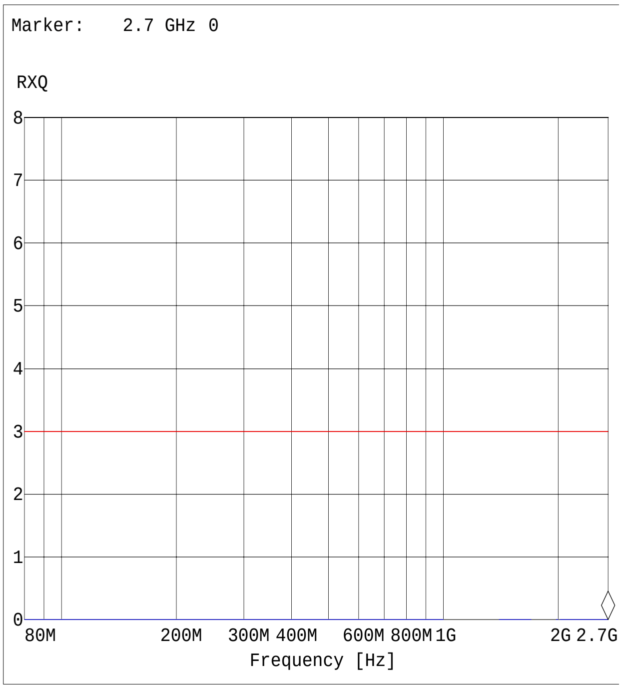


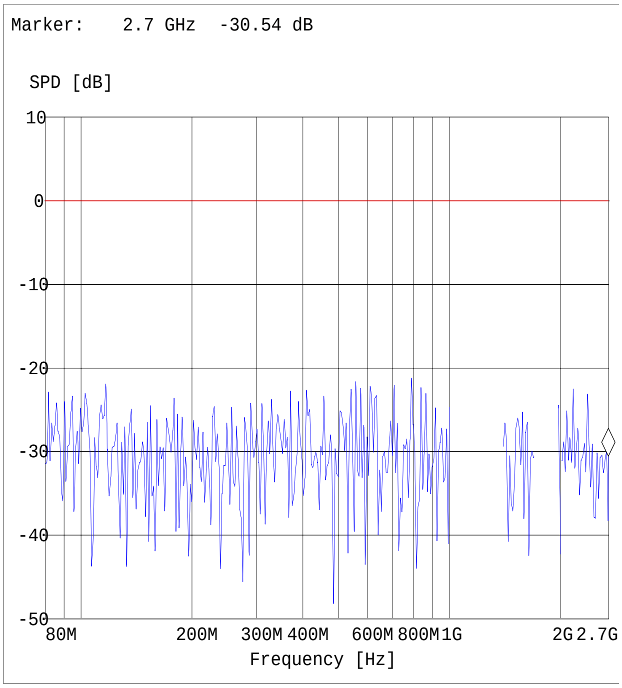
Immunity to RF electromagnetic fields

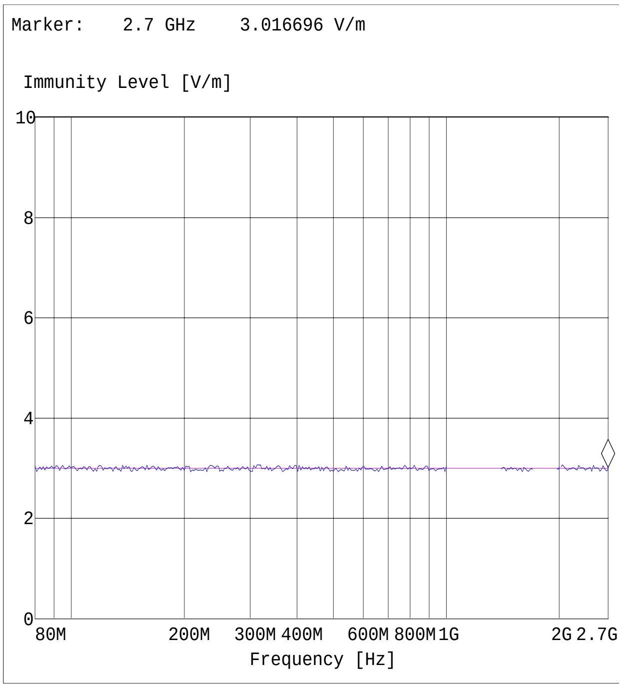
Diagram No.: 03-04

EUT: EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer: LEITRONIC AG
Operating Condition: GSM 1800 TCH 700; max power control level
Test Specification: EN 61000-4-3 using max hold
Operator: Doe
Tested Side: left
Antenna polarisation: vertical
EUT position: horizontal





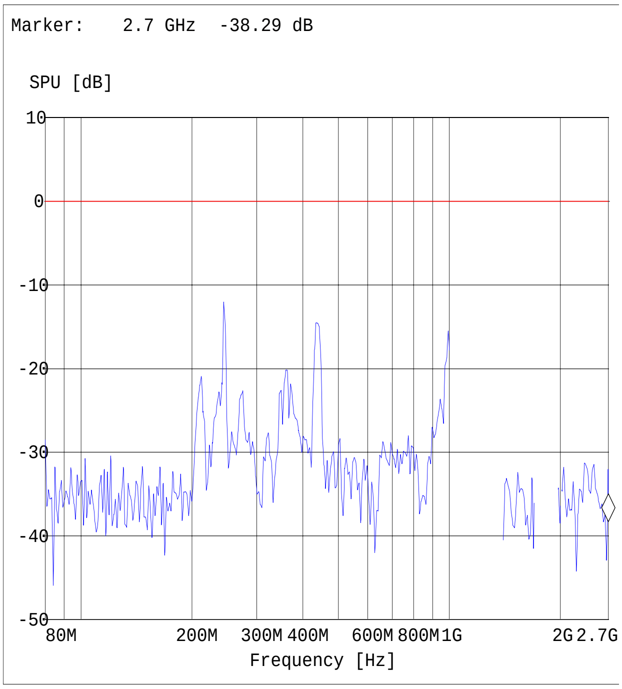


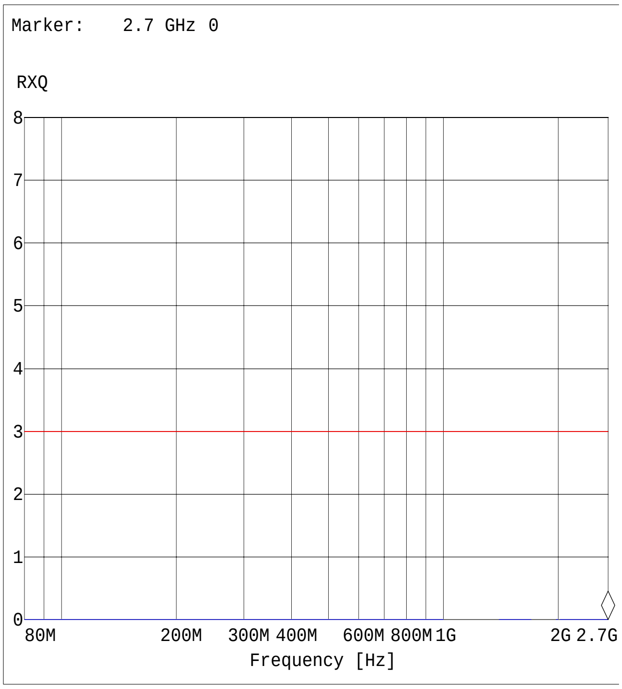


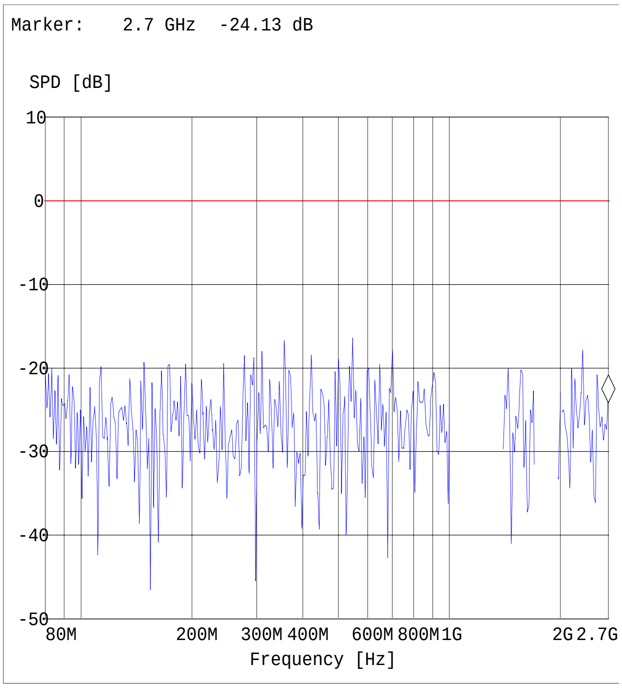
Immunity to RF electromagnetic fields

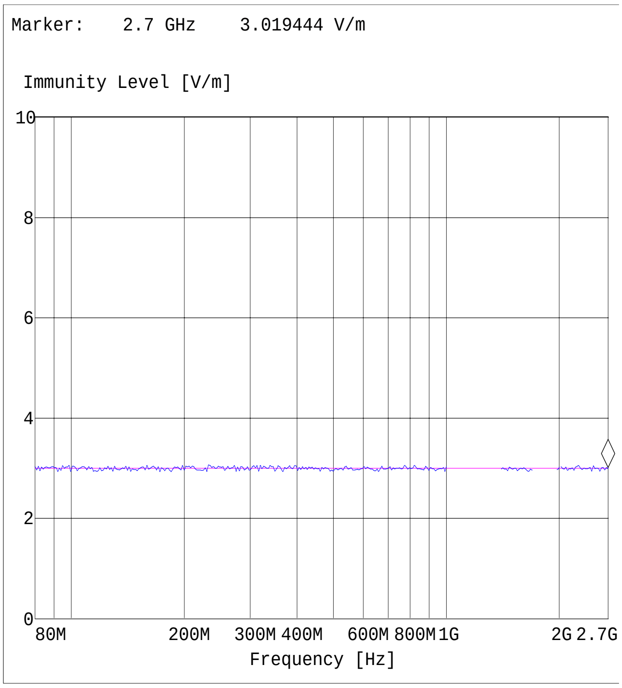
Diagram No.: 03-05

EUT:	EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer:	LEITRONIC AG
Operating Condition:	GSM 1800 TCH 700; max power control level
Test Specification:	EN 61000-4-3 using max hold
Operator:	Doe
Tested Side:	top
Antenna polarisation:	vertical
EUT position:	vertical





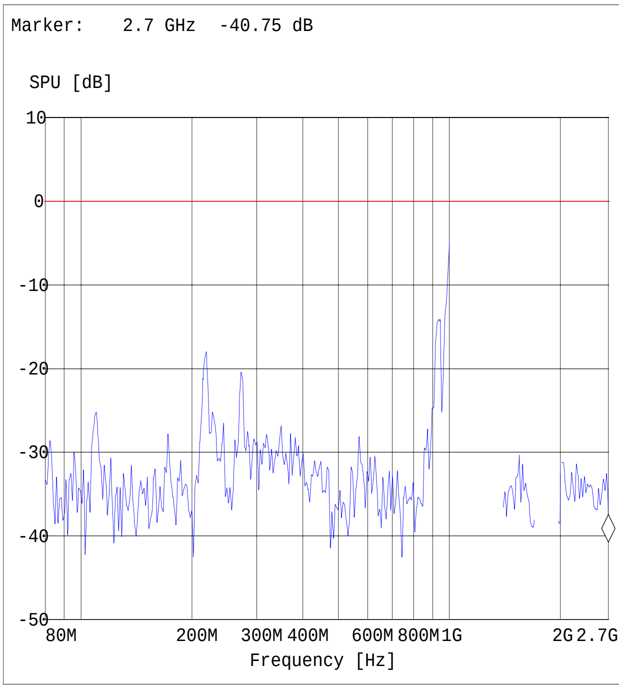


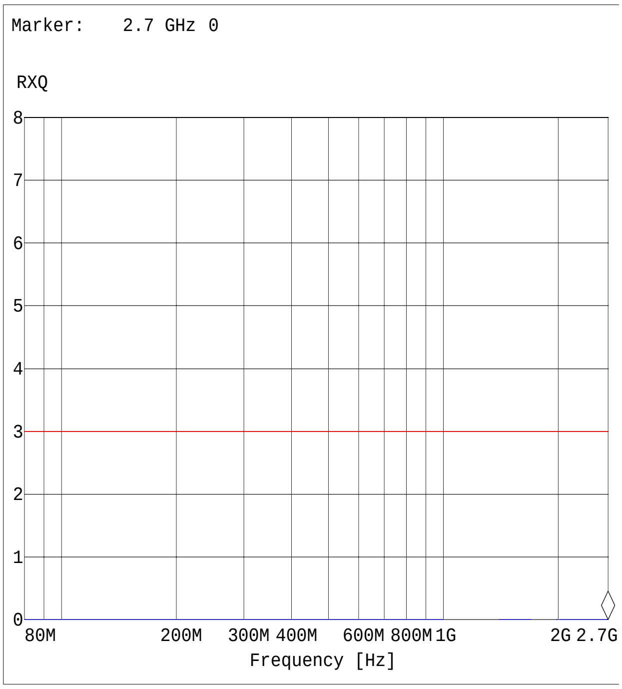


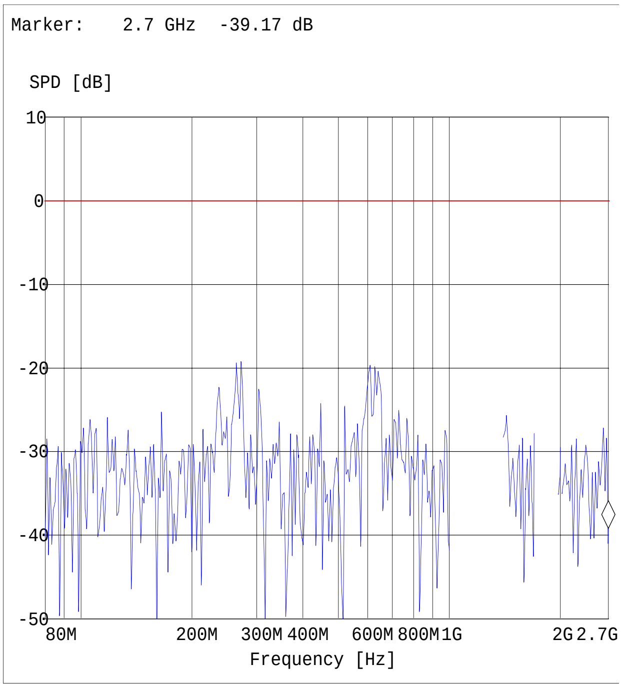
Immunity to RF electromagnetic fields

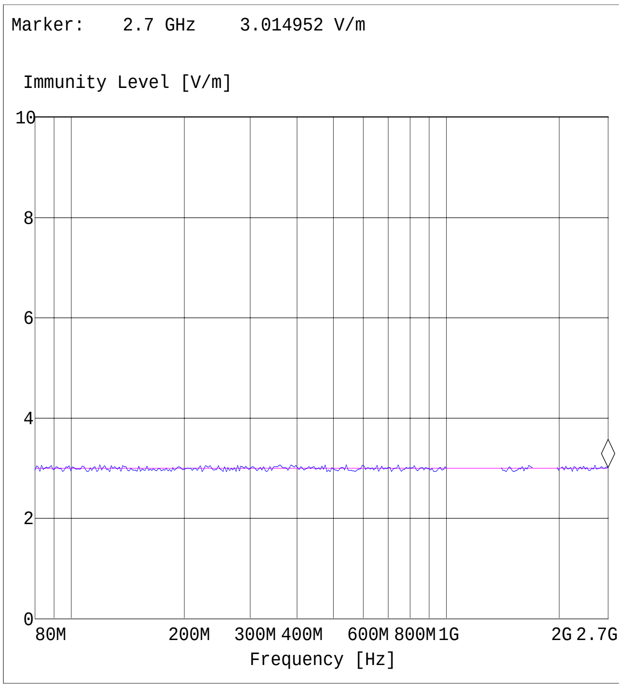
Diagram No.: 03-06

EUT: EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer: LEITRONIC AG
Operating Condition: GSM 1800 TCH 700; max power control level
Test Specification: EN 61000-4-3 using max hold
Operator: Doe
Tested Side: bottom
Antenna polarisation: horizontal
EUT position: vertical





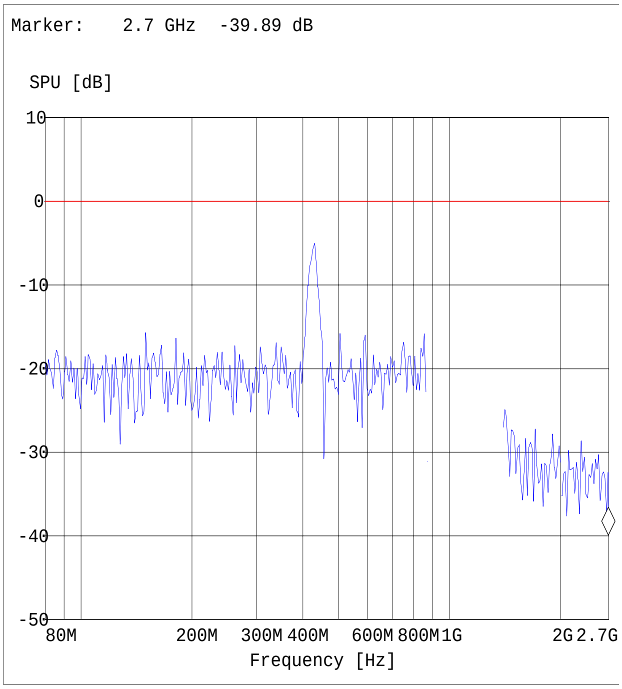


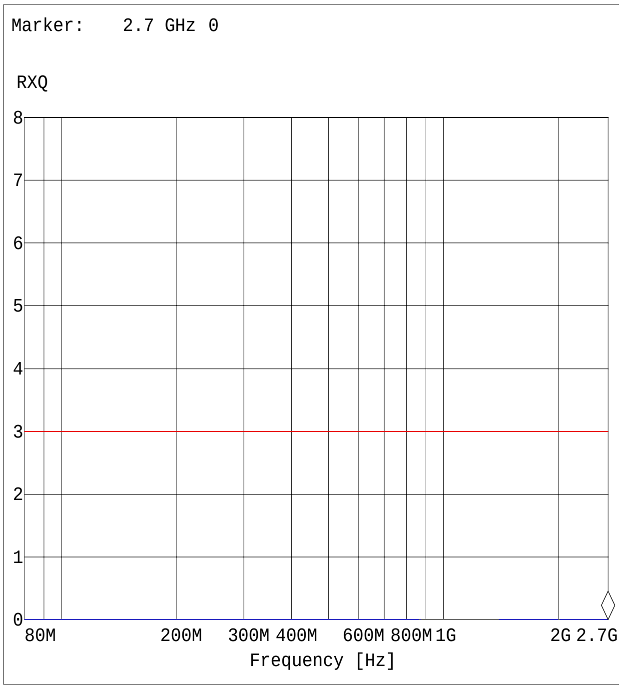


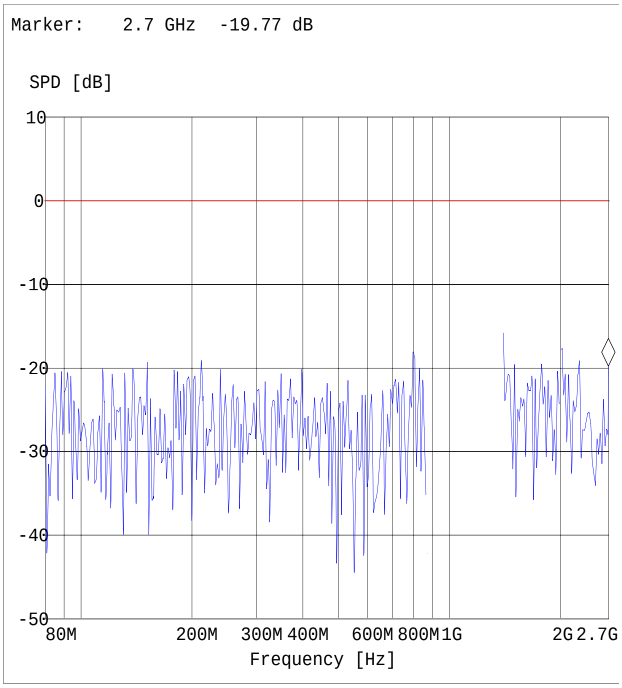
Immunity to RF electromagnetic fields

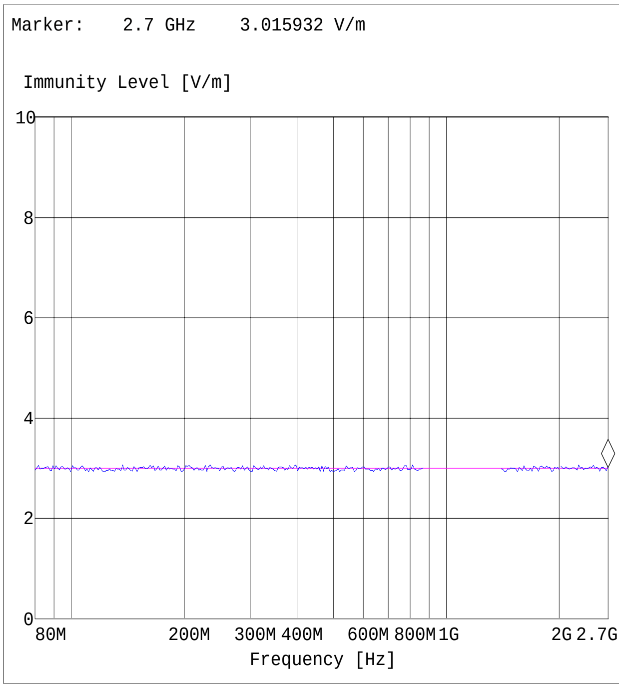
Diagram No.: 03-07

EUT: EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer: LEITRONIC AG
Operating Condition: GSM 900 TCH 60; max power control level
Test Specification: EN 61000-4-3 using max hold
Operator: Doe
Tested Side: front
Antenna polarisation: vertical
EUT position: horizontal





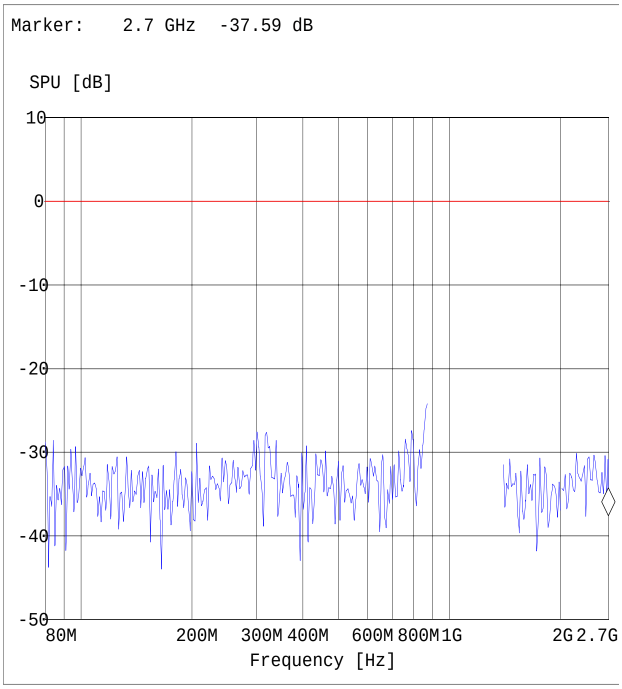


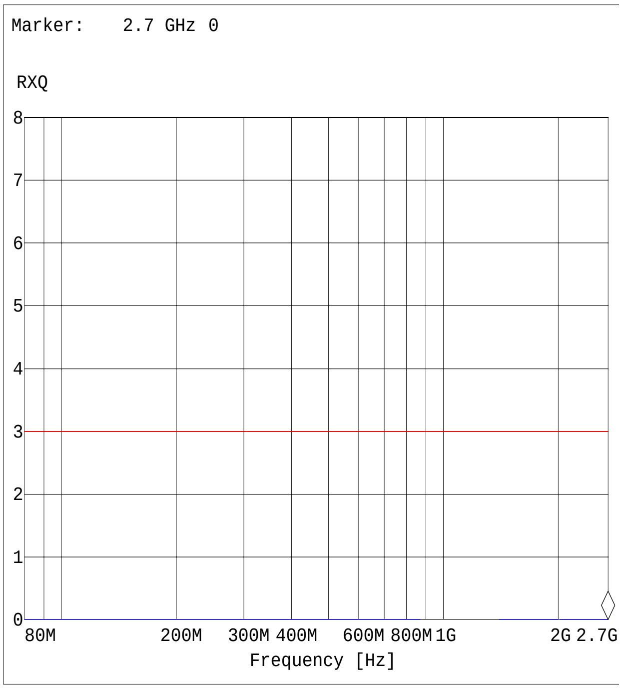


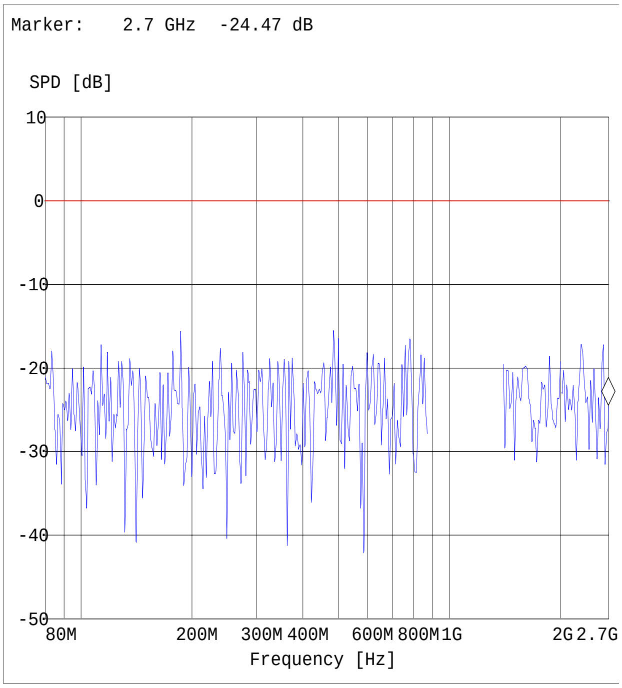
Immunity to RF electromagnetic fields

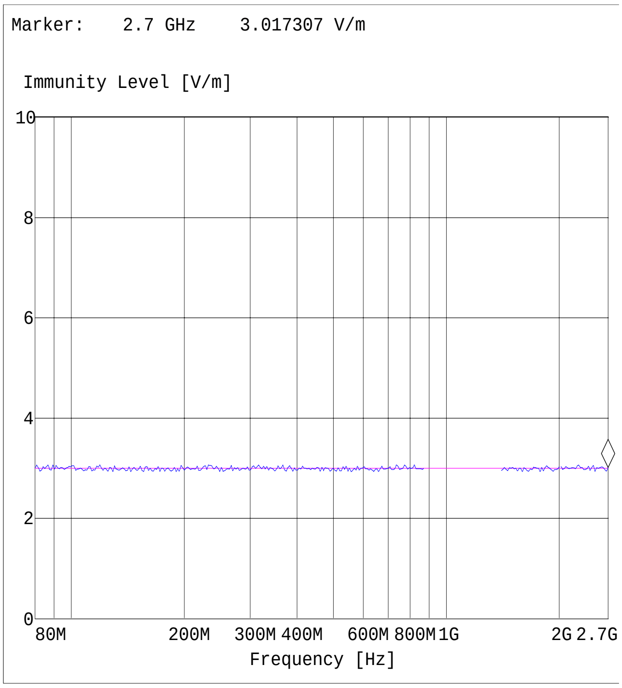
Diagram No.: 03-08

EUT: EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer: LEITRONIC AG
Operating Condition: GSM 900 TCH 60; max power control level
Test Specification: EN 61000-4-3 using max hold
Operator: Doe
Tested Side: right
Antenna polarisation: vertical
EUT position: horizontal





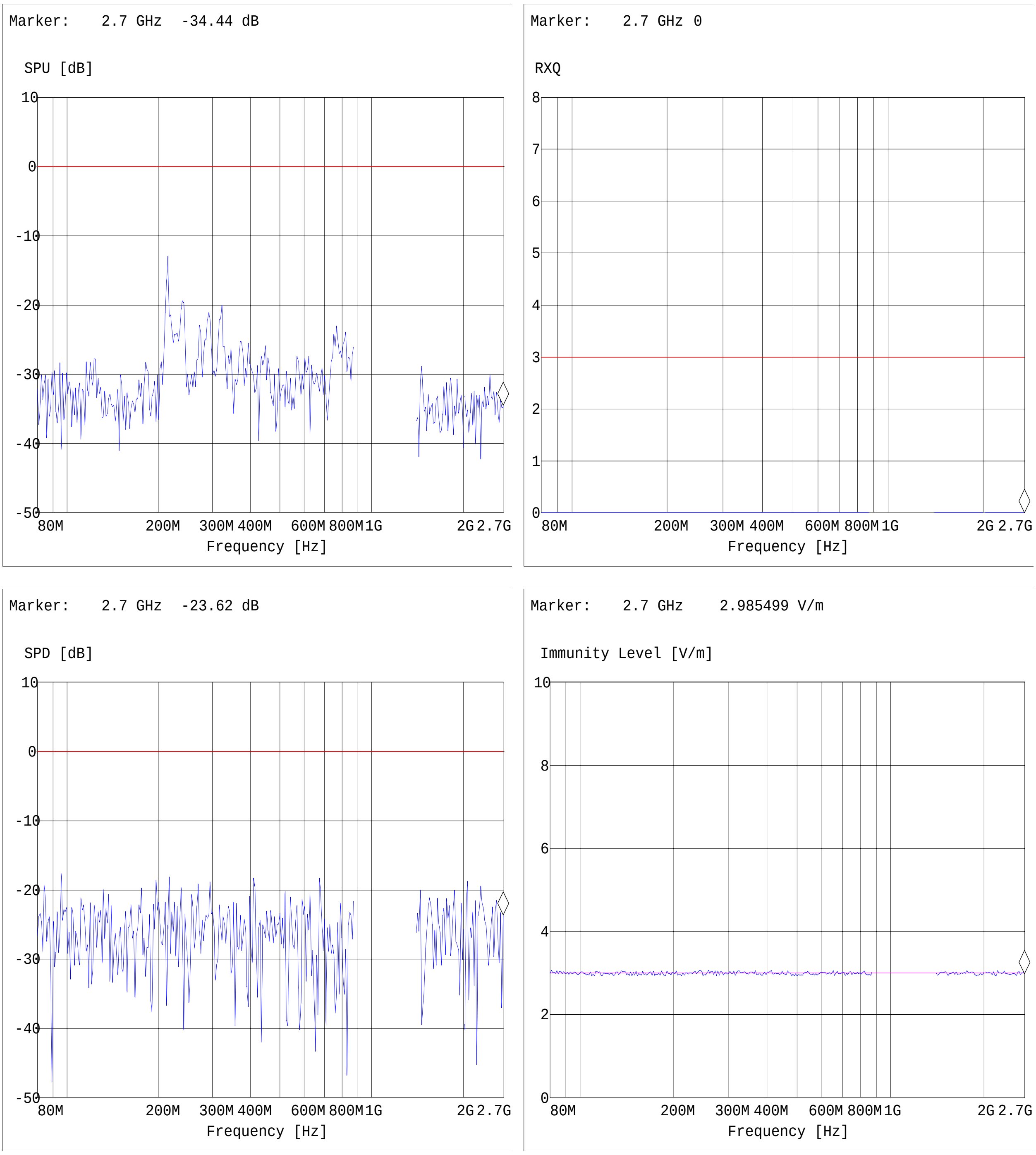




Immunity to RF electromagnetic fields

Diagram No.: 03-09

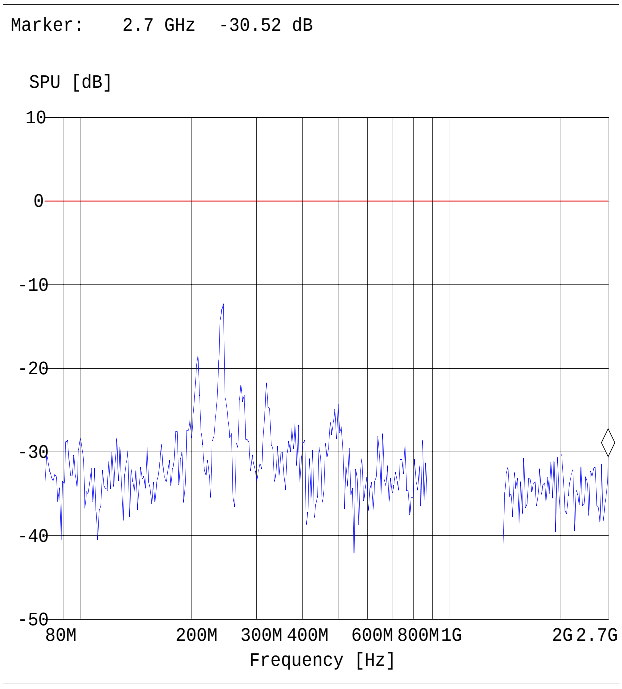
EUT: EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer: LEITRONIC AG
Operating Condition: GSM 900 TCH 60; max power control level
Test Specification: EN 61000-4-3 using max hold
Operator: Doe
Tested Side: rear
Antenna polarisation: horizontal
EUT position: horizontal

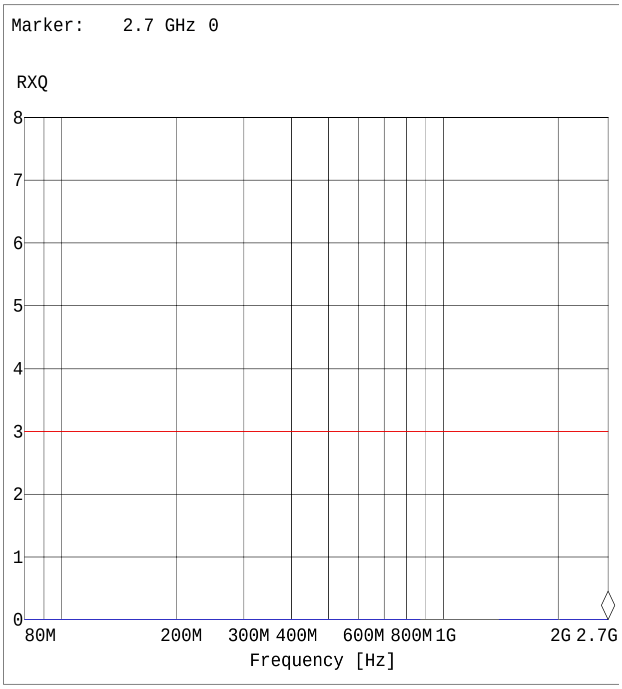


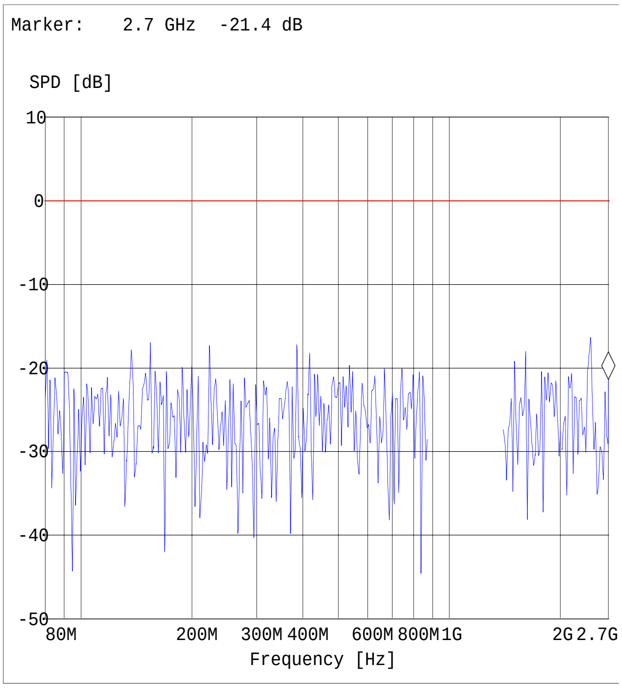
Immunity to RF electromagnetic fields

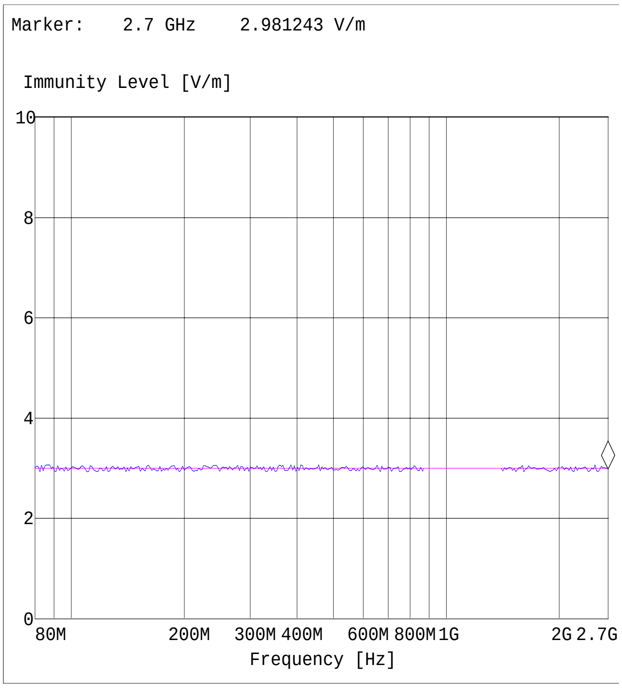
Diagram No.: 03-10

EUT:	EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer:	LEITRONIC AG
Operating Condition:	GSM 900 TCH 60; max power control level
Test Specification:	EN 61000-4-3 using max hold
Operator:	Doe
Tested Side:	left
Antenna polarisation:	horizontal
EUT position:	horizontal





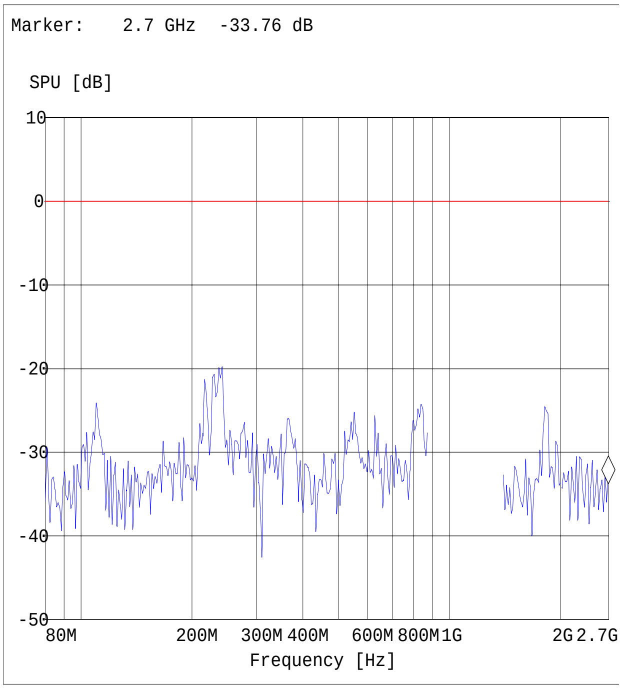


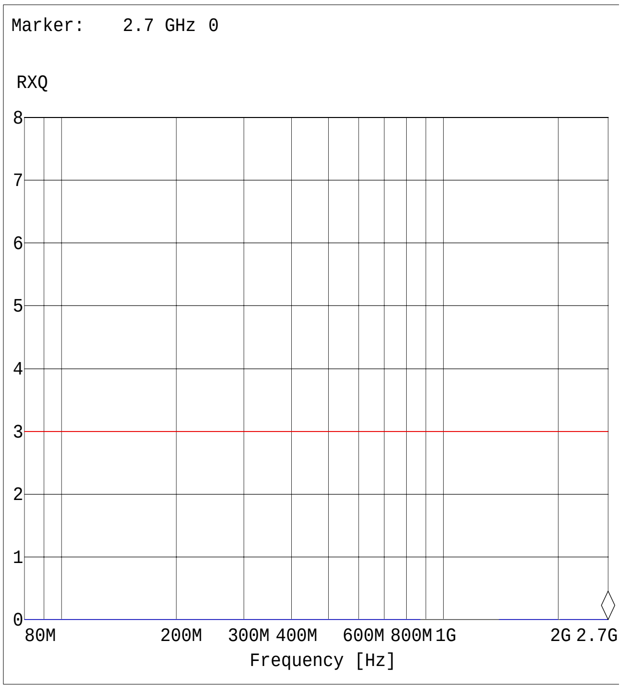


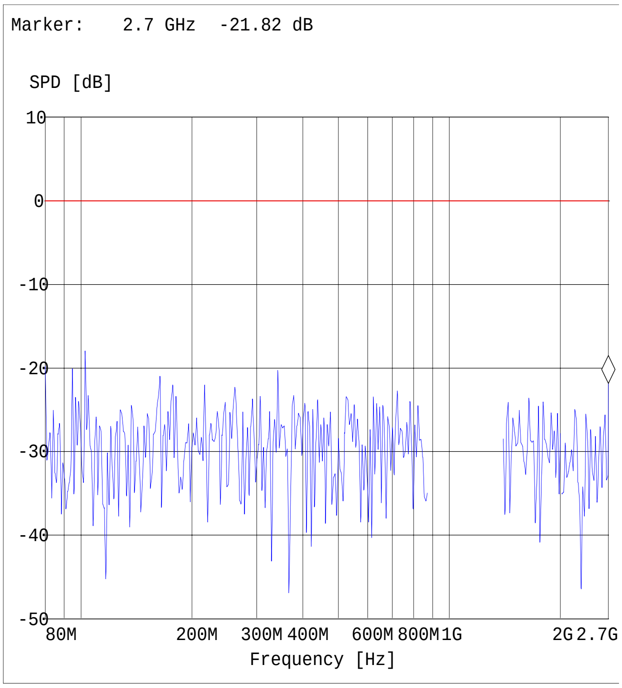
Immunity to RF electromagnetic fields

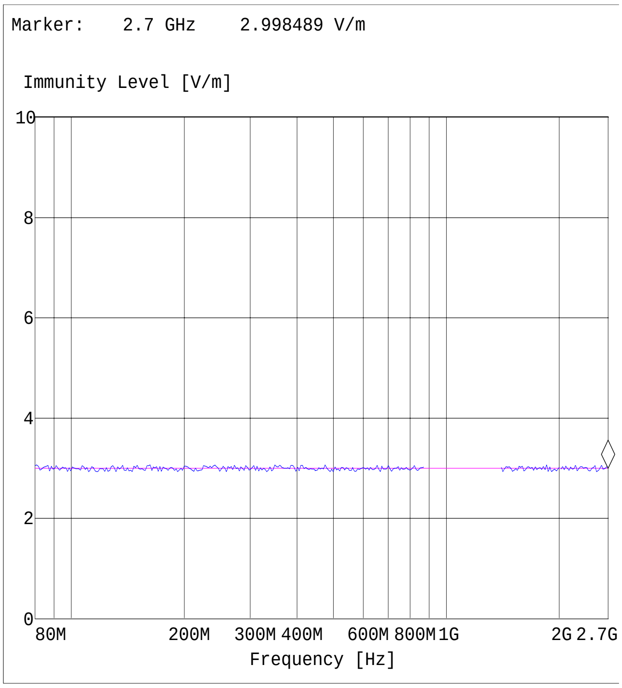
Diagram No.: 03-11

EUT:	EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer:	LEITRONIC AG
Operating Condition:	GSM 900 TCH 60; max power control level
Test Specification:	EN 61000-4-3 using max hold
Operator:	Doe
Tested Side:	top
Antenna polarisation:	horizontal
EUT position:	vertical





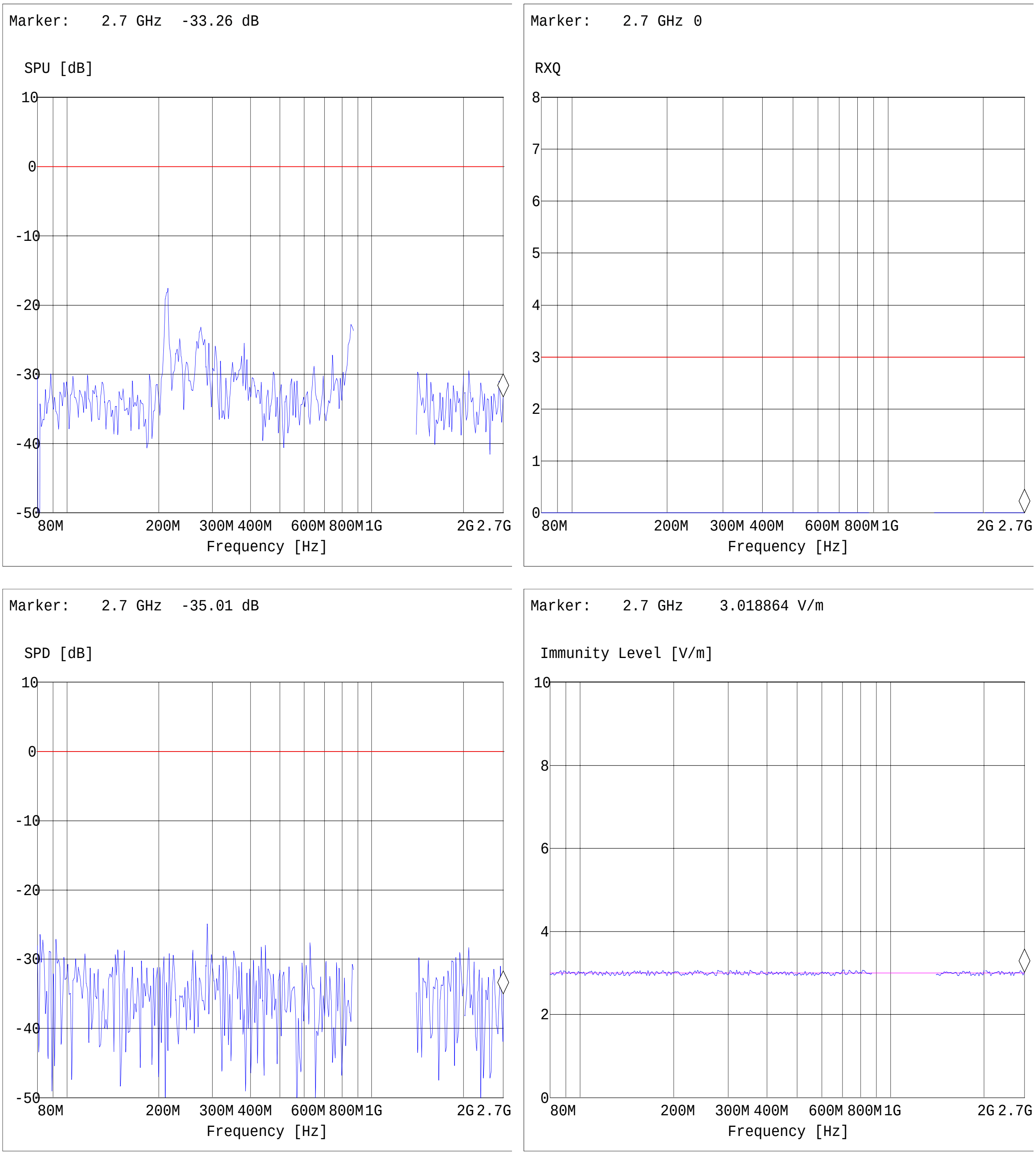




Immunity to RF electromagnetic fields

Diagram No.: 03-12

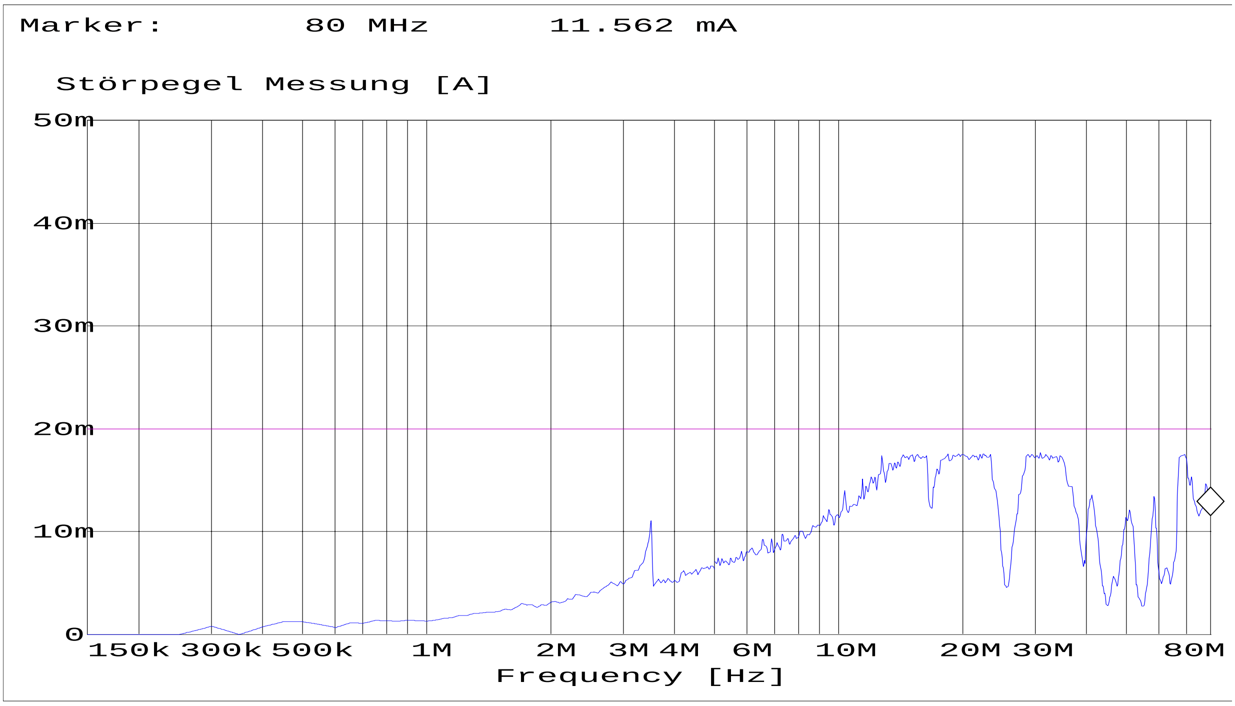
EUT: EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer: LEITRONIC AG
Operating Condition: GSM 900 TCH 60; max power control level
Test Specification: EN 61000-4-3 using max hold
Operator: Doe
Tested Side: bottom
Antenna polarisation: vertical
EUT position: vertical

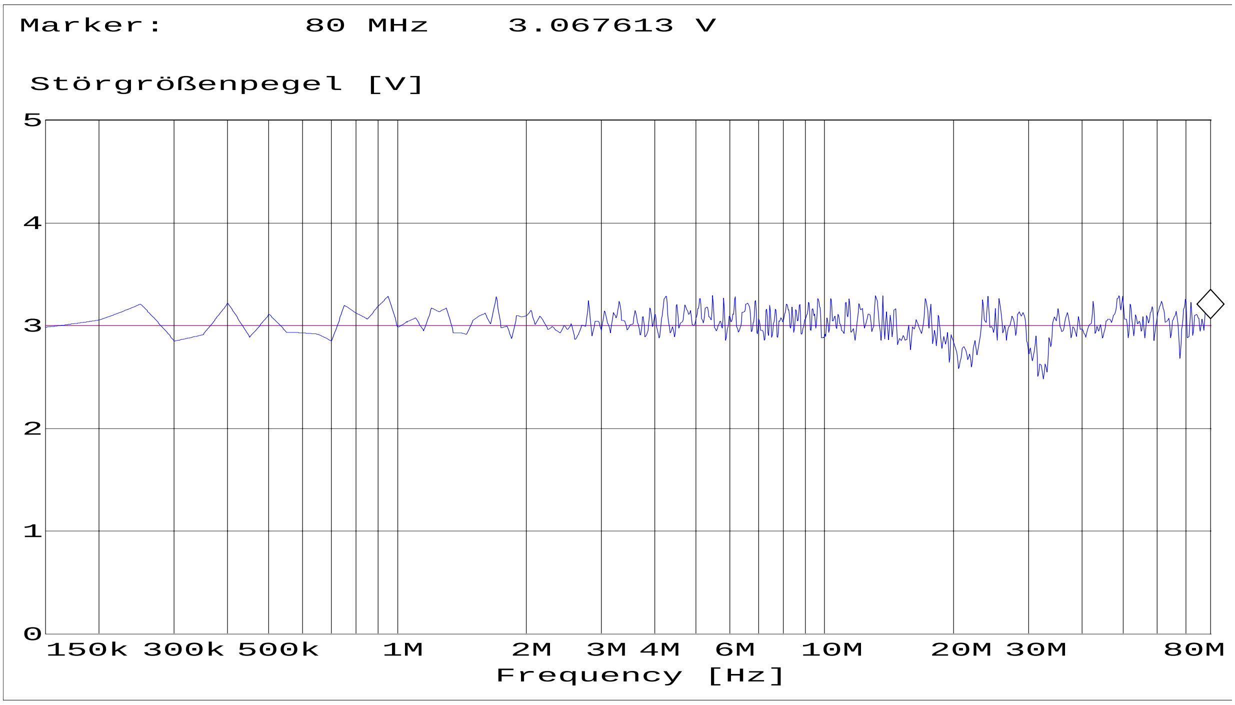


Immunity to conducted disturbances (RF-fields)

Diagram-No.: 06-01

EUT: EA-GSM-DIN 100.0812 (V6010a01) / 14.12.2012
Manufacturer: LEITRONIC AG
Operating condition: GSM 1800 idle mode
Used coupling device: Current clamp F120
Operator: Doe
Specifications: EN 61000-4-6
Comment: Cable Harness

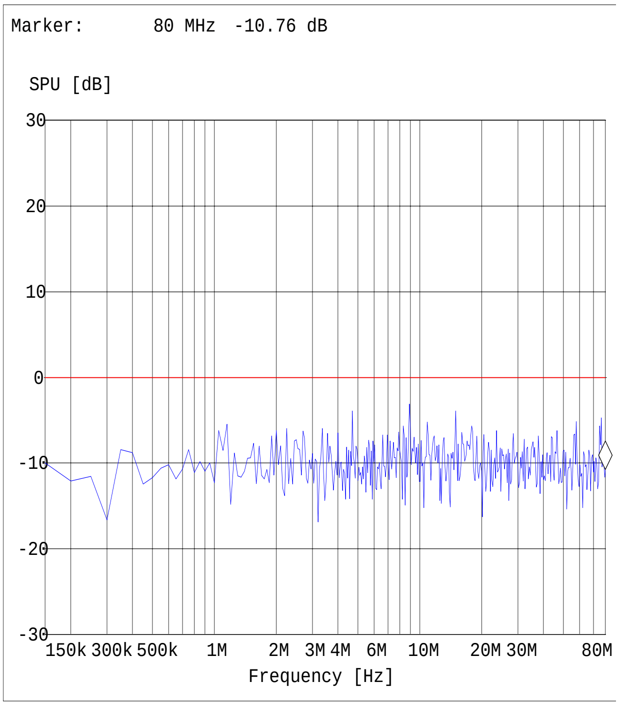


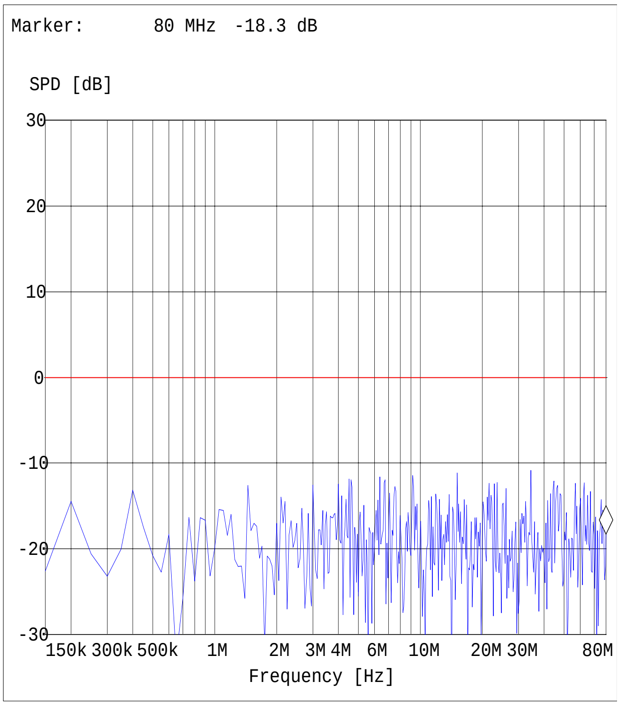


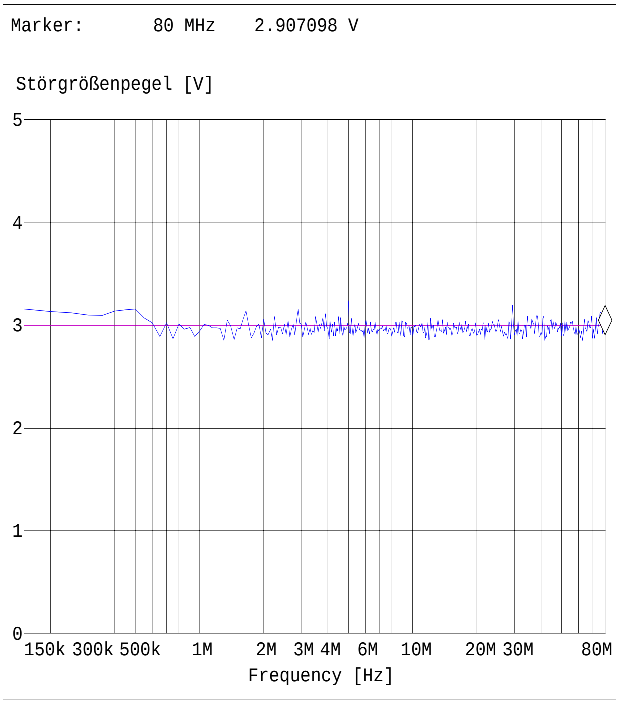
Immunity to conducted disturbances (RF-fields)

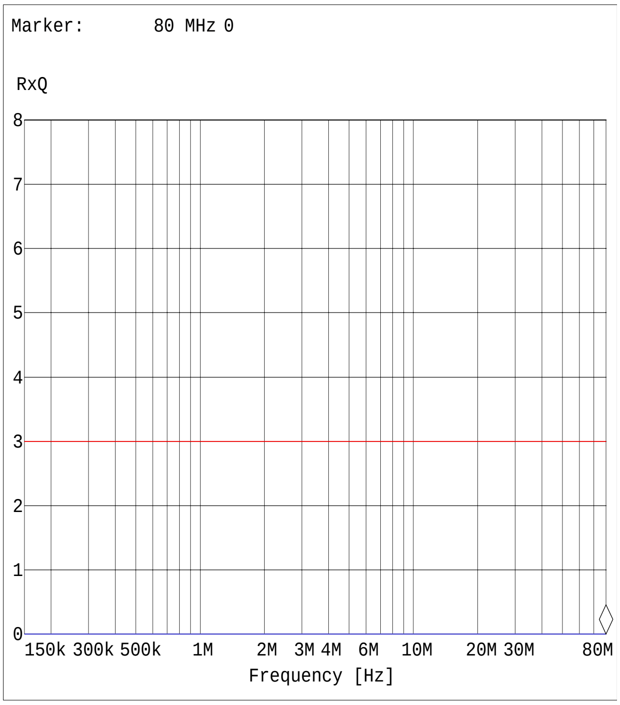
Diagram-No.: 06-02

EUT: EA-GSM-DIN 100.0812 (V6010a01) / 19.12.2012
manufacturer: LEITRONIC AG
operating condition: GSM 900 TCH 60
used coupling device: CDN M2
operator: Gal
specifications: EN 61000-4-6
comment: AC Port







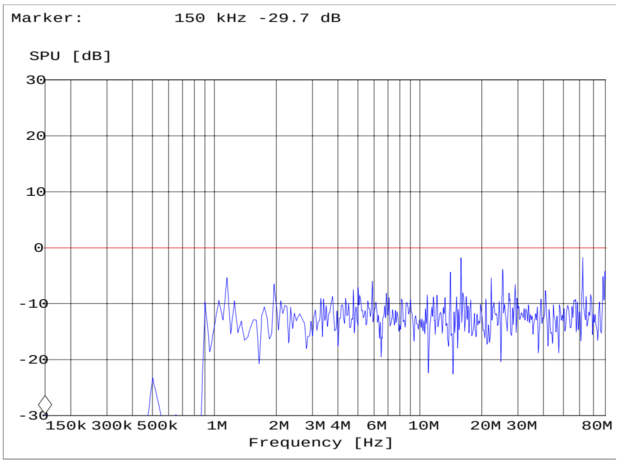


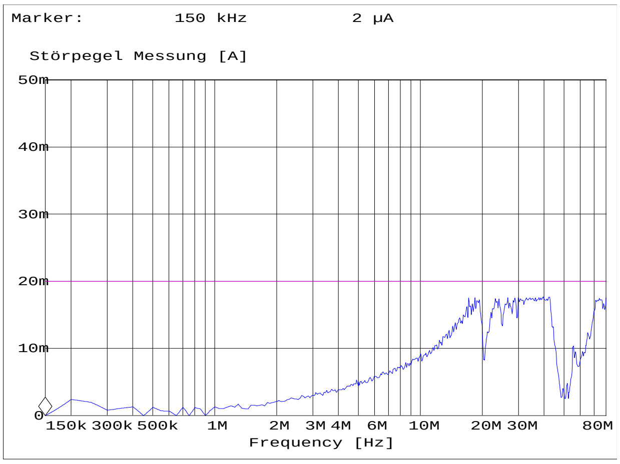
EMS-K1 Short Report ***<LEI_1201_07>***

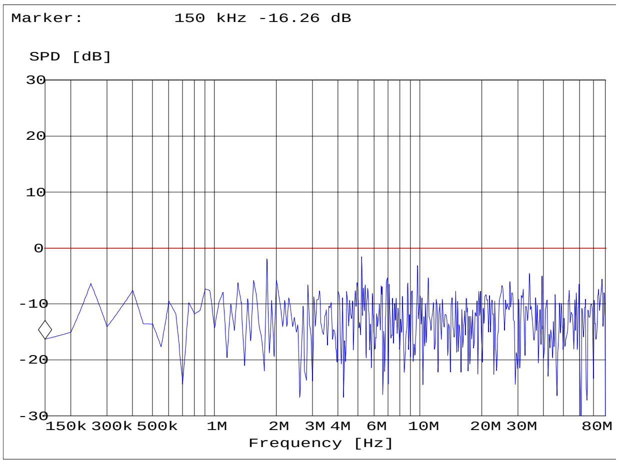
Immunity to conducted disturbances (RF-fields)

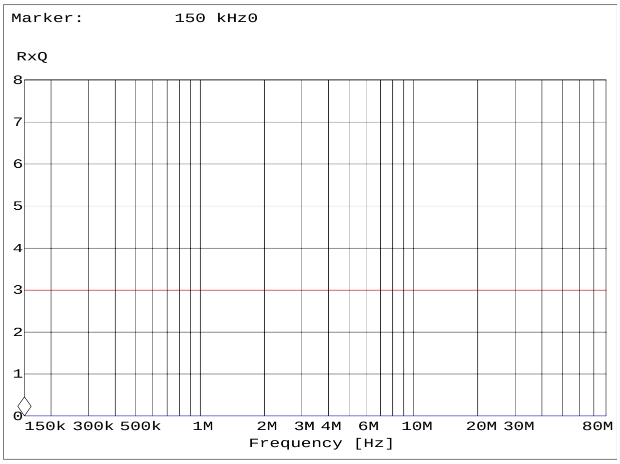
Diagram-No.: 06-07

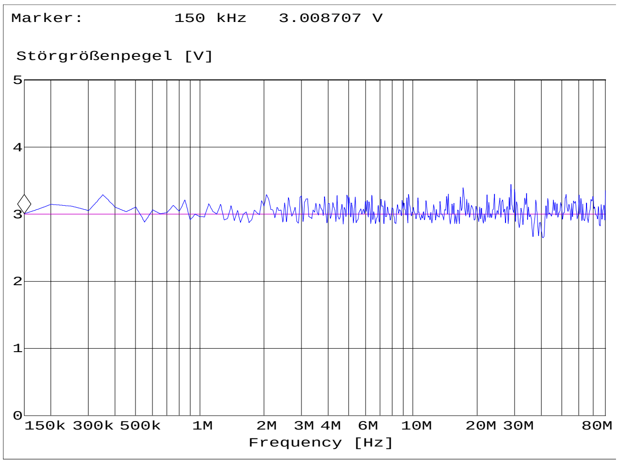
EUT: EA-GSM-DIN 100.0814 (V6010g03)
Manufacturer: LEITRONIC AG
Operating condition: GSM 900 TCH 60
Used coupling device: Current clamp F120
Operator: Doe
Specifications: EN 61000-4-6
Comment: Cable harness











Immunity to conducted disturbances (RF-fields)

Diagram-No.: 06-12

EUT: EA-GSM-DIN 100.0814 (V6010g03)
manufacturer: LEITRONIC AG
operating condition: GSM 1800 TCH 700
used coupling device: CDN S1
operator: Doe
specifications: EN 61000-4-6
comment: GSM-Antenna-Port