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Test Report

Report Number: F111945E1

Applicant:

deister electronic GmbH

Manufacturer:

deister electronic GmbH

Equipment under Test (EUT):

Amantag Compact

Laboratory (CAB) accredited by
Deutsche Gesellschaft für Akkreditierung mbH
in compliance with DIN EN ISO/IEC 17025
under the Reg. No. DGA-PL-105/99-22,
FCC Test site registration number 90877 and
Industry Canada Test site registration IC3469A-1

REFERENCES

[1] **ANSI C63.4-2009** American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
[2] **FCC CFR 47 Part 15 (October 2009)** Radio Frequency Devices
[3] **ICES-003 Issue 4 (February 2004)** Digital Apparatus

TEST RESULT

The requirements of the tests performed as shown in the overview (clause 4) were fulfilled by the equipment under test.
The complete test results are presented in the following.

	Name	Signature	Date
Test engineer:	Thomas KÜHN		10 August 2011
Authorized reviewer:	Bernd STEINER		10 August 2011

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Contents: Page

1 IDENTIFICATION 4
1.1 Applicant 4
1.2 Manufacturer 4
1.3 Test laboratory 4
1.4 EUT (Equipment Under Test) 5
1.5 Technical data of equipment 5
1.6 Dates 6
2 OPERATIONAL STATES 6
3 ADDITIONAL INFORMATION 7
4 OVERVIEW 7
5 TEST RESULTS 8
5.1 Radiated emissions 8
5.1.1 Method of measurement (radiated emissions) 8
5.1.2 Test results (radiated emissions) 15
5.1.2.1 Preliminary emission measurement (30 MHz to 1 GHz) 15
5.1.2.2 Final radiated emission measurement (30 MHz to 1 GHz) 17
5.2 Conducted emissions on power supply lines (150 kHz to 30 MHz) 19
5.2.1 Method of measurement 19
5.2.2 Test results (conducted emissions on power supply lines) 20
6 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS 22
7 REPORT HISTORY 22
8 LIST OF ANNEXES 23

1 IDENTIFICATION

1.1 Applicant

Name:	deister electronic GmbH
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Country:	Germany
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Phone:	+ 49 51 05 516 - 129
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eMail Address:	eichler@deister-gmbh.de
Applicant represented during the test by the following person:	-

1.2 Manufacturer

Name:	deister electronic GmbH
Address:	Hermann-Bahlsen-Str. 11 - 13 30890 Barsinghausen
Country:	Germany
Name for contact purposes:	Mr. Stefan EICHLER
Phone:	+ 49 51 05 516 - 129
Fax:	+49 51 05 516 - 266
eMail Address:	eichler@deister-gmbh.de
Applicant represented during the test by the following person:	-

1.3 Test laboratory

The tests were carried out at: **PHOENIX TESTLAB GmbH**
Königswinkel 10
32825 Blomberg
Germany

accredited by DGA Deutsche Gesellschaft für Akkreditierung mbH in compliance with DIN EN ISO/IEC 17025 under Reg. No. DGA-PL-105/99-22, FCC Test site registration number 90877 and Industry Canada Test site registration IC3469A-1.

1.4 EUT (Equipment Under Test)

Test object: *	8.1 kHz transmitter and 433 MHz reciever
Type: *	Amantag Compact
FCC ID: *	IXLAMANTAGCOMPACT
IC: *	1893B-AMANCOMP
Article number: *	0721.000
Serial number: *	3172701261
Hardware version: *	03 02 08
Software version: *	Pic:V1.30 AVR:V1.15
Highest internal frequency: *	26.4344 MHz

1.5 Technical data of equipment

Equipment category: *	Class A equipment with integrated antennas					
Channel spacing: *	Not applicable (one channel operation)					
Alignment range: *	Not applicable (one channel operation)					
Switching range: *	Not applicable (one channel operation)					
Supply Voltage: *	U_{nom}=	24.0 V DC	U_{min}=	18.0 V DC	U_{max}=	30.0 V DC
Power supply: *	24 V DC by external power supply					
Temperature range: *	5 °C + 60 °C					
Ancillaries to be tested with:	Power supply FW 1598 for used for conducted emission measurement					

* declared by the applicant.

The following external I/O cables were used:

Identification	Connector		Length
	EUT	Ancillary	
DC input	Part of the customised connector ST1 or ST2	-	2.5 m
RS 485	Part of the customised connector ST1 or ST2	Terminated with 120 Ω	2.5 m
Relay1	Customised connector ST4	-	2.5 m
Relay2	Customised connector ST5	-	2.5 m

*: Length during the test if no other specified.

1.6 Dates

Date of receipt of test sample:	26 May 2011
Start of test:	20 July 2011
End of test:	29 July 2011

2 OPERATIONAL STATES

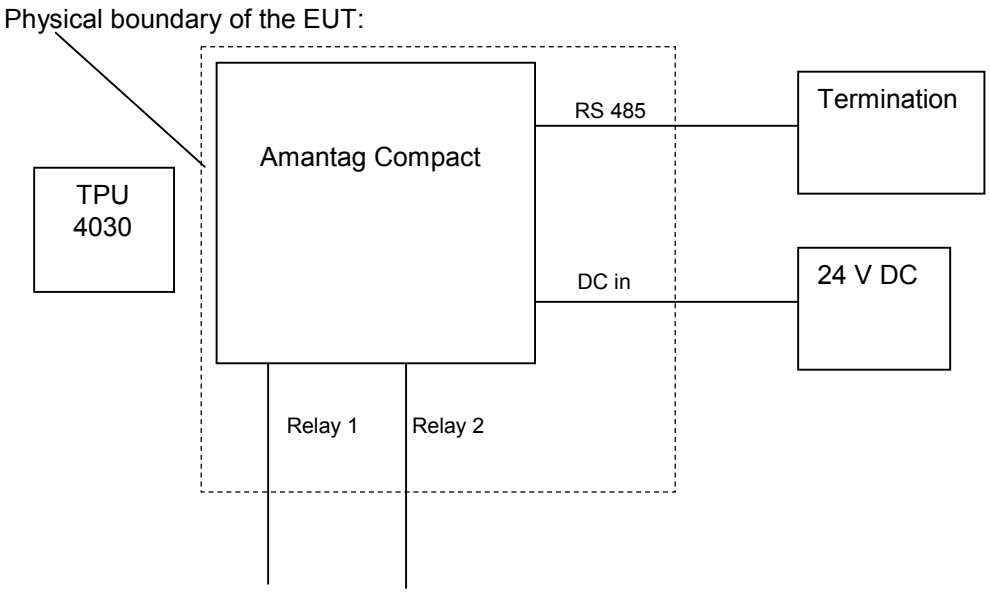
The EUT is intended to be used in combination with a TPU 4030 transponder. A TPU 4030, which receives the 8.1 kHz signal form the EUT's transmitter generates a telegram on 433 MHz, which will be received by the EUT's receiver.

As pre-tests have shown, no measurable differences were observed whole using the internal connector ST1 or ST2. Therefore the ST2 was used for connecting the power supply and the RS485 interface. The RS485 interface of the EUT was terminated with 120 Ω during the tests, because no remote station for this interface was available. Furthermore it was requested by the applicant that the relays outputs of the EUT were connected to a 2.5 m long wire, no termination was used on these lines.

During the tests the test sample was powered with 24.0 V by an external power supply.

The EUT is categorised as class A digital device.

The 8.1 kHz transmitter of the EUT was active during all tests.



3 ADDITIONAL INFORMATION

The EUT is intended to be wall mounted. Therefore all radiated tests were carried out in normal operation position of the EUT.

During the tests the EUT was not labelled as required by FCC / IC.

4 OVERVIEW

Application	Frequency range [MHz]	FCC 47 CFR Part 15 section [2]	ICES-003, Issue 4 [3]	Status	Refer page
Radiated emissions	30 - 1,000	15.105 (a) 15.109 (a)	5.4 [4]	Passed	8 et seq.
Conducted emissions on supply line	0.15 - 30	15.107 (a)	5.2 [4]	Passed	19 et seq.

5 TEST RESULTS

5.1 Radiated emissions

5.1.1 Method of measurement (radiated emissions)

The radiated emission measurement is subdivided into five stages.

- A preliminary measurement carried out in a fully anechoic chamber with a fixed antenna height in the frequency range 9 kHz to 1 GHz.
- A final measurement carried out on an outdoor test side without reflecting ground plane and a fixed antenna height in the frequency range 9 kHz to 30 MHz.
- A final measurement carried out on an open area test side with reflecting ground plane and various antenna heights in the frequency range 30 MHz to 1 GHz.
- A preliminary measurement carried out in a fully anechoic chamber with a variable antenna distance and height in the frequency range 1 GHz to 25 / 40 GHz.
- A final measurement carried out in a fully anechoic chamber with a fixed antenna height in the frequency range 1 GHz to 25 / 40 GHz.

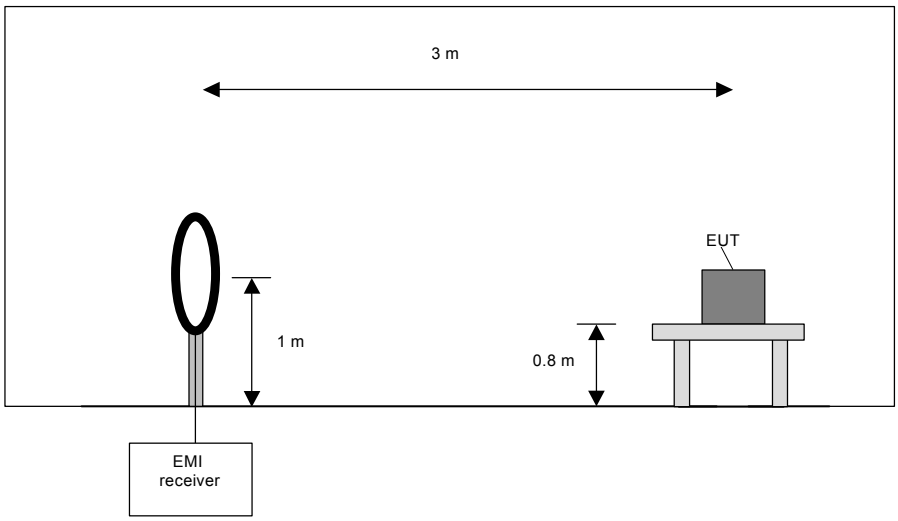
Preliminary measurement (9 kHz to 30 MHz):

In the first stage a preliminary measurement will be performed in a shielded room with a measuring distance of
3 meters. Tabletop devices will set up on a non-conducting support with a size of 1 m by 1.5 m and a height of 80 cm. Floor-standing devices will be placed directly on the turntable/ground plane. The set up of the Equipment under test will be in accordance to ANSI C63.4-2009 [1].

The frequency range 9 kHz to 30 MHz will be monitored with a spectrum analyser while the system and its cables will be manipulated to find out the configuration with the maximum emission levels if applicable. The EMI Receiver will be set to MAX Hold mode. The EUT and the measuring antenna will be rotated around their vertical axis to found the maximum emissions.

The resolution bandwidth of the spectrum analyser will be set to the following values:

Frequency range	Resolution bandwidth
9 kHz to 150 kHz	200 Hz
150 kHz to 30 MHz	10 kHz



Preliminary measurement procedure:

Prescans were performed in the frequency range 9 kHz to 150 kHz and 150 kHz to 30 MHz.

The following procedure will be used:

1) Monitor the frequency range at horizontal polarisation and a EUT azimuth of 0 °.
2) Manipulate the system cables within the range to produce the maximum level of emission.
3) Rotate the EUT by 360 ° to maximize the detected signals.
4) Make a hardcopy of the spectrum.
5) Measure the frequencies of highest detected emission with a lower span and resolution bandwidth to increase the accuracy and note the frequency value.
6) Repeat steps 1) to 5) with the other orthogonal axes of the EUT (because of EUT is a module and might be used in a handheld equipment application).
7) Rotate the measuring antenna and repeat steps 1) to 5).

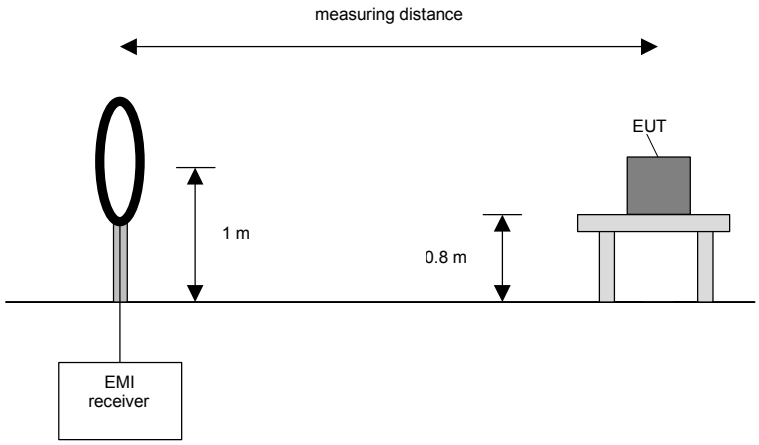
Final measurement (9 kHz to 30 MHz):

In the second stage a final measurement will be performed on an open area test site with no conducting ground plane in measuring distances of 3 m, 10 m and 30 m. In the case where larger measuring distances is required the results will be extrapolated based on the values measured on the closer distances according to Section 15.31 (f) (2) [2]. The final measurement will be performed with a EMI Receiver set to Quasi Peak detector except for the frequency bands 9 kHz to 90 kHz and 110 kHz to 490 kHz where an average detector will be used according Section 15.209 (d) [2].

On the during the preliminary measurement detected frequencies the final measurement will be performed while rotating the EUT and the measuring antenna in the range of 0 ° to 360 ° around their vertical axis until the maximum value is found.

The resolution bandwidth of the EMI Receiver will be set to the following values:

Frequency range	Resolution bandwidth
9 kHz to 150 kHz	200 Hz
150 kHz to 30 MHz	9 kHz



Final measurement procedure:

The following procedure will be used:

1) Monitor the frequency range with the measuring antenna at vertical orientation parallel to the EUT at an azimuth of 0 °.
2) Rotate the EUT by 360 ° to maximize the detected signals and note the azimuth and orientation.
3) Rotate the measuring antenna to find the maximum and note the value.
4) Rotate the measuring antenna and repeat steps 1) to 3) until the maximum value is found.
5) Repeat steps 1) to 4) with the other orthogonal axes of the EUT (because of EUT is a module and might be used in a handheld equipment application).

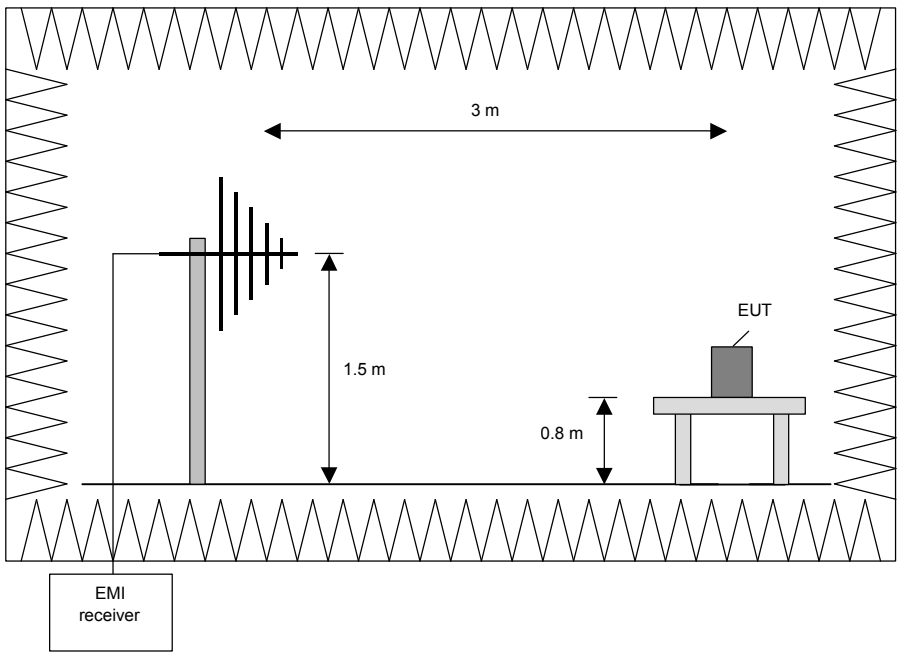
Preliminary measurement (30 MHz to 1 GHz)

In the first stage a preliminary measurement will be performed in a fully anechoic chamber with a measuring distance of 3 meter. Tabletop devices will set up on a non-conducting support with a size of 1 m by 1.5 m and a height of 80 cm. Floor-standing devices will be placed directly on the turntable/ground plane. The set up of the Equipment under test will be in accordance to ANSI C63.4-2009 [1].

The frequency range 30 MHz to 1 GHz will be measured with an EMI Receiver set to MAX Hold mode and a resolution bandwidth of 100 kHz. The measurement will be performed in horizontal and vertical polarisation of the measuring antenna and while rotating the EUT in its vertical axis in the range of 0 ° to 360 °.

The resolution bandwidth of the EMI Receiver will be set to the following values:

Frequency range	Resolution bandwidth
30 MHz to 230 MHz	100 kHz
230 MHz to 1 GHz	100 kHz



Procedure preliminary measurement:

Prescans were performed in the frequency range 30 MHz to 230 MHz and 230 MHz to 1 GHz.
The following procedure will be used:

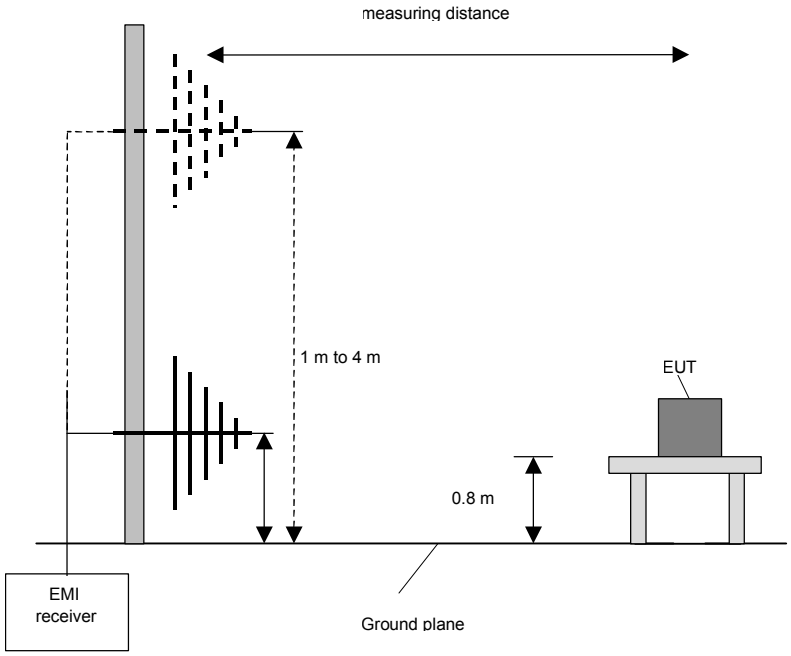
1. Monitor the frequency range at horizontal polarisation and a EUT azimuth of 0 °.
2. Manipulate the system cables within the range to produce the maximum level of emission.
3. Rotate the EUT by 360 ° to maximize the detected signals.
4. Make a hardcopy of the spectrum.
5. Measure the frequency of the detected emissions with a lower span and resolution bandwidth to increase the accuracy and note the frequency value.
6. Repeat 1) to 4) with the other orthogonal axes of the EUT (because of EUT is a module and might be used in a handheld equipment application).
7. Repeat 1) to 5) with the vertical polarisation of the measuring antenna.

Final measurement (30 MHz to 1 GHz)

A final measurement on an open area test site will be performed on selected frequencies found in the preliminary measurement. During this test the EUT will be rotated in the range of 0 ° to 360 °, the measuring antenna will be set to horizontal and vertical polarisation and raised and lowered in the range from 1 m to 4 m to find the maximum level of emissions.

The resolution bandwidth of the EMI Receiver will be set to the following values:

Frequency range	Resolution bandwidth
30 MHz to 1 GHz	120 kHz



Procedure final measurement:

The following procedure will be used:

1) Measure on the selected frequencies at an antenna height of 1 m and a EUT azimuth of 23 °.
2) Move the antenna from 1 m to 4 m and note the maximum value at each frequency.
3) Rotate the EUT by 45 ° and repeat 2) until an azimuth of 337 ° is reached.
4) Repeat 1) to 3) for the other orthogonal antenna polarization.
5) Move the antenna and the turntable to the position where the maximum value is detected.
6) Measure while moving the antenna slowly +/- 1 m.
7) Set the antenna to the position where the maximum value is found.
8) Measure while moving the turntable +/- 45 °.
9) Set the turntable to the azimuth where the maximum value is found.
10) Measure with Final detector (QP and AV) and note the value.
11) Repeat 5) to 10) for each frequency.
12) Repeat 1) to 11) for each orthogonal axes of the EUT (because of EUT is a module and might be used in a handheld equipment application).

Preliminary and final measurement (1 GHz to 40 GHz)

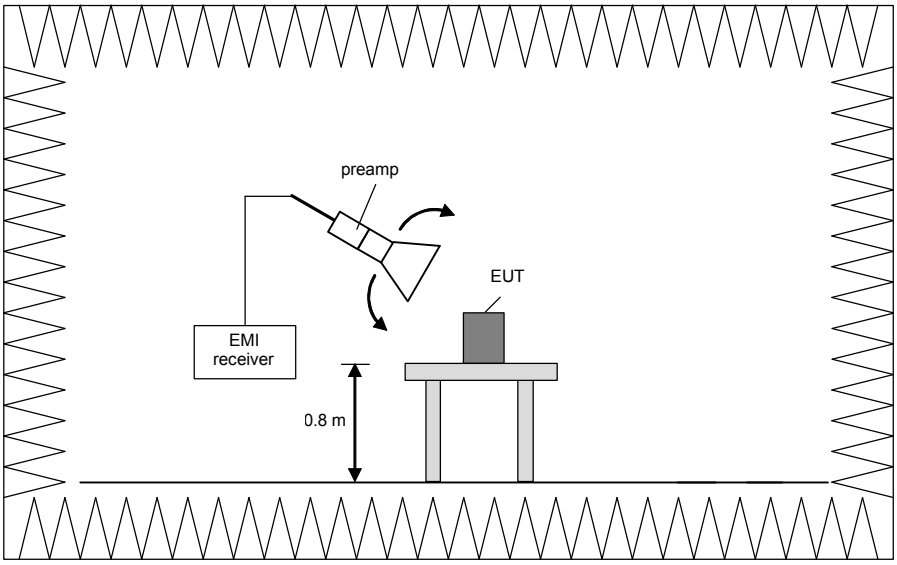
This measurement will be performed in a fully anechoic chamber. Tabletop devices will set up on a non-conducting support with a size of 1 m by 1.5 m and a height of 80 cm. Floor-standing devices will be placed directly on the turntable/ground plane. The set up of the Equipment under test will be in accordance to ANSI C63.4-2009 [1].

Preliminary measurement (1 GHz to 40 GHz)

The frequency range will be divided into different sub ranges depending of the frequency range of the used horn antenna. The spectrum analyser set to MAX Hold mode and a resolution bandwidth of 100 kHz. The measurement will be performed in horizontal and vertical polarisation of the measuring antenna, the antenna close to the EUT and while moving the antenna over all sides of the EUT. With the spectrum analyser in CLEAR / WRITE mode the cone of the emission should be found and than the measuring distance will be set to 3 m with the receiving antenna moving in this cone of emission. At this position the final measurement will be carried out.

The resolution bandwidth of the EMI Receiver will be set to the following values:

Frequency range	Resolution bandwidth
1 GHz to 4 GHz	100 kHz
4 GHz to 12 GHz	100 kHz
12 GHz to 18 GHz	100 kHz
18 GHz to 25 / 26.5 GHz	100 kHz
26.5 GHz to 40 GHz	100 kHz

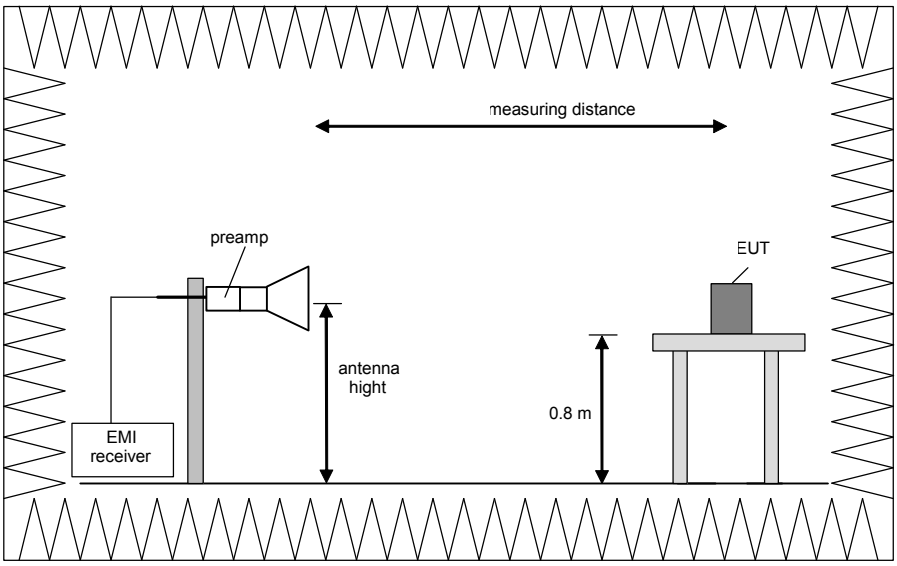


Final measurement (1 GHz to 40 GHz)

The frequency range will be divided into different sub ranges depending of the frequency range of the used horn antenna. The EMI Receiver set to peak and average mode and a resolution bandwidth of 1 MHz. The measurement will be performed in horizontal and vertical polarisation of the measuring antenna and while rotating the EUT in its vertical axis in the range of 0 ° to 360 ° in order to have the antenna inside the cone of radiation.

The resolution bandwidth of the EMI Receiver will be set to the following values:

Frequency range	Resolution bandwidth
1 GHz to 4 GHz	1 MHz
4 GHz to 12 GHz	1 MHz
12 GHz to 18 GHz	1 MHz
18 GHz to 25 / 26.5 GHz	1 MHz
26.5 GHz to 40 GHz	1 MHz



Procedure of measurement:

The measurements were performed in the frequency ranges 1 GHz to 4 GHz, 4 GHz to 12 GHz, 12 GHz to 18 GHz, 18 GHz to 25 /26.5 GHz and 26.5 GHz to 40 GHz.
The following procedure will be used:

1) Monitor the frequency range at horizontal polarisation and move the antenna over all sides of the EUT (if necessary move the EUT to another orthogonal axis).
2) Change the antenna polarisation and repeat 1) with vertical polarisation.
3) Make a hardcopy of the spectrum.
4) Measure the frequency of the detected emissions with a lower span and resolution bandwidth to increase the accuracy and note the frequency value.
5) Change the analyser mode to Clear / Write and found the cone of emission.
6) Rotate and move the EUT, so that the measuring distance can be enlarged to 3 m and the antenna will be still inside the cone of emission.
7) Measure the level of the detected frequency with the correct resolution bandwidth, with the antenna polarisation and azimuth and the peak and average detector, which causes the maximum emission.
8) Repeat steps 1) to 7) for the next antenna spot if the EUT is larger than the antenna beam width.

Step 1) to 6) are defined as preliminary measurement.

5.1.2 Test results (radiated emissions)

5.1.2.1 Preliminary emission measurement (30 MHz to 1 GHz)

Ambient temperature	20 °C	Relative humidity	53 %

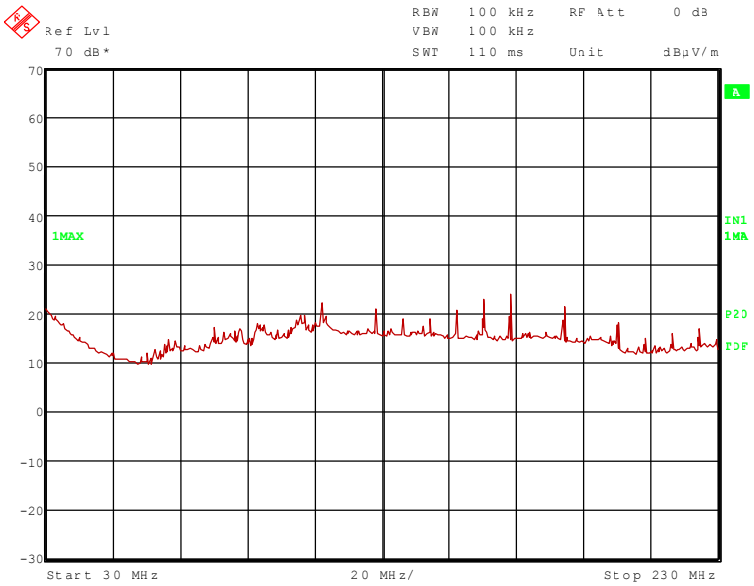
Position of EUT: The EUT was set-up on a non-conducting table of a height of 0.8 m. The distance between EUT and antenna was 3 m.

Cable guide: The cable was connected to the EUT and running vertically to the false floor. For detail information of test set-up and the cable guide refer to the photographs in annex A of this test report.

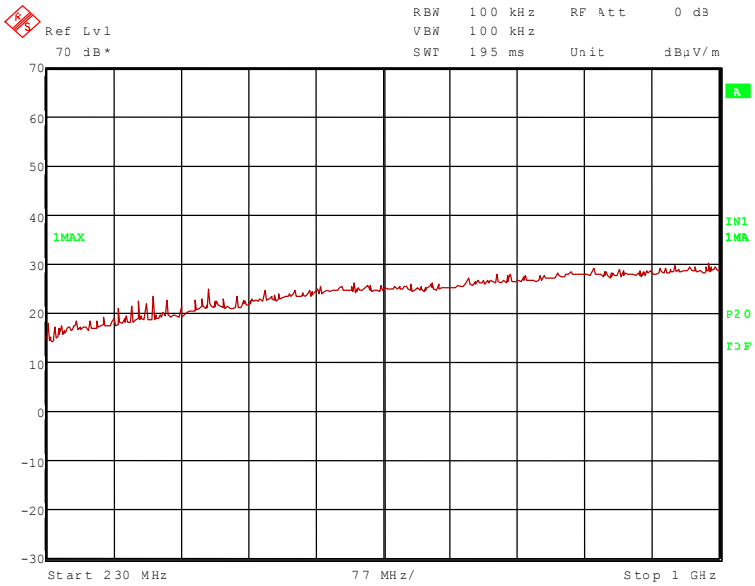
Test record: All results are shown in the following.

Supply voltage: During all measurements the EUT was supplied with 24.0 V DC via an external power supply.

111945_1.wmf: Spurious emissions from 30 MHz to 230 MHz:



111945_2.wmf: Spurious emissions from 230 MHz to 1 GHz:



The following frequencies were found during the preliminary radiated emission test:

- 112.016 MHz, 128.018 MHz, 144.021 MHz, 160.023 MHz, 168.023 MHz, 184.027 MHz, 328.048 MHz, 352.051 MHz and 416.060 MHz.

These frequencies have to be measured in a final measurement. The results were presented in the following.

TEST EQUIPMENT USED FOR THE TEST:

29, 31 – 35, 142

5.1.2.2 Final radiated emission measurement (30 MHz to 1 GHz)

Ambient temperature	20 °C	Relative humidity	53 %

Position of EUT: The EUT was set-up on a non-conducting table of a height of 0.8 m. The distance between EUT and antenna was 3 m.

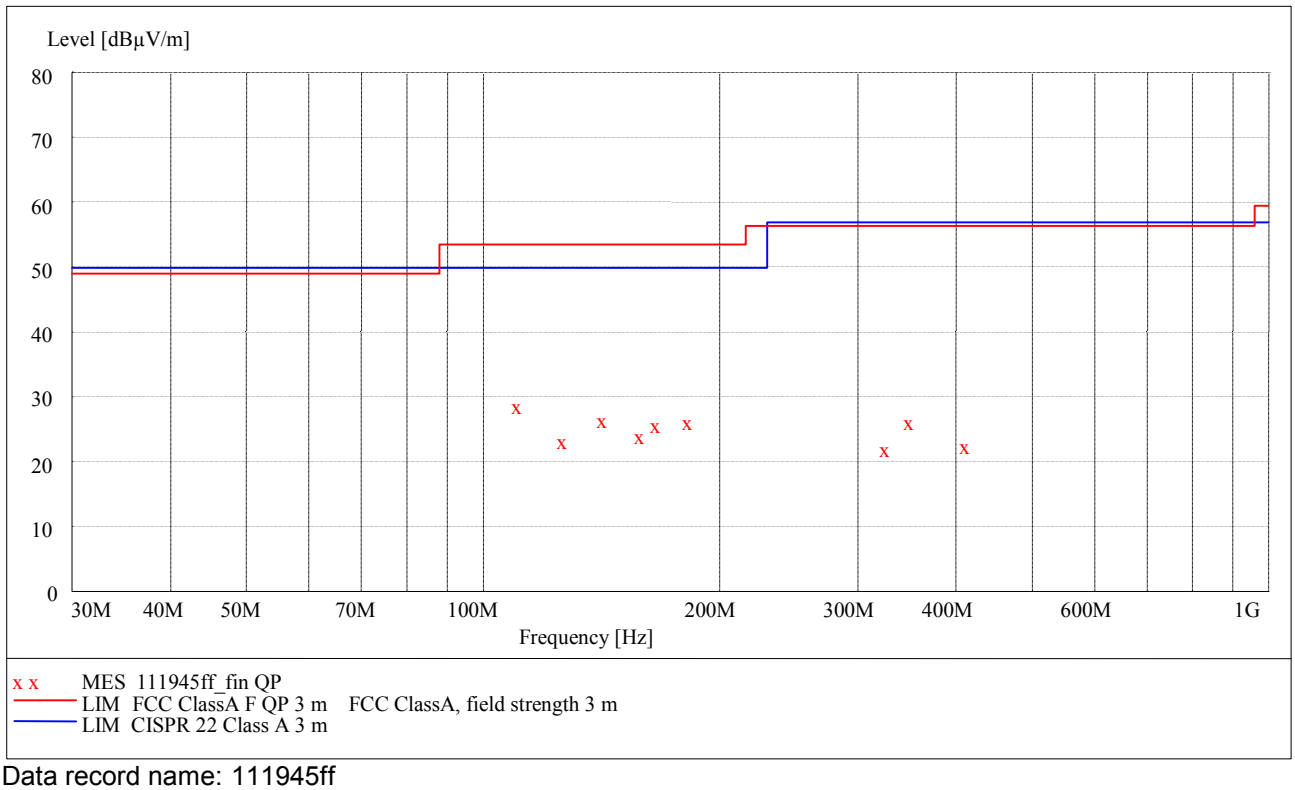
Cable guide: The cable was connected to the EUT and running vertically to the false floor. For detail information of test set-up and the cable guide refer to the photographs in annex A of this test report.

Test record: All results are shown in the following.

Supply voltage: During all measurements the EUT was supplied with 24.0 V DC via an external power supply.

The results of the standard subsequent measurement on the open area test site are indicated in the table below. The limits as well as the measured results (levels) refer to the above mentioned standard while taking account of the specified requirements for a 3 m measuring distance.

The measurement time with the quasi-peak detector is 1 second.



Data record name: 111945ff

Result measured with the quasi-peak detector:
(This value is marked in the diagram by an x)

Spurious emissions according to FCC 15.109, Class A									
Frequency MHz	Result dBµV/m	Limit dBµV/m *	Margin dB	Readings dBµV	Antenna factor dB/m	Cable loss dB	Height cm	Azimuth deg	Pol.
112.016	29.2	53.5	24.3	16.2	11.9	1.1	304.0	93.0	Hor.
128.018	23.7	53.5	29.8	10.1	12.3	1.3	225.0	100.0	Hor.
144.021	26.9	53.5	26.6	13.8	11.8	1.3	212.0	265.0	Hor.
160.023	24.3	53.5	29.2	11.7	11.1	1.5	147.0	257.0	Hor.
168.023	26.1	53.5	27.4	14.3	10.4	1.4	138.0	261.0	Hor.
184.027	26.5	53.5	27.0	15.8	9.2	1.5	100.0	194.0	Vert.
328.048	22.4	56.4	34.0	6.8	13.7	1.9	100.0	180.0	Hor.
352.051	26.7	56.4	29.7	10.4	14.3	2.0	206.0	179.0	Hor.
416.060	23.0	56.4	33.4	4.7	16.0	2.3	168.0	351.0	Hor.
Measurement uncertainty				+2.2 dB / -3.6 dB					

Spurious emissions according to CISPR 22, Class A									
Frequency MHz	Result dBµV/m	Limit dBµV/m *	Margin dB	Readings dBµV	Antenna factor dB/m	Cable loss dB	Height cm	Azimuth deg	Pol.
112.016	29.2	50.0	20.8	16.2	11.9	1.1	304.0	93.0	Hor.
128.018	23.7	50.0	26.3	10.1	12.3	1.3	225.0	100.0	Hor.
144.021	26.9	50.0	23.1	13.8	11.8	1.3	212.0	265.0	Hor.
160.023	24.3	50.0	25.7	11.7	11.1	1.5	147.0	257.0	Hor.
168.023	26.1	50.0	23.9	14.3	10.4	1.4	138.0	261.0	Hor.
184.027	26.5	50.0	23.5	15.8	9.2	1.5	100.0	194.0	Vert.
328.048	22.4	57.0	34.6	6.8	13.7	1.9	100.0	180.0	Hor.
352.051	26.7	57.0	30.3	10.4	14.3	2.0	206.0	179.0	Hor.
416.060	23.0	57.0	34.0	4.7	16.0	2.3	168.0	351.0	Hor.
Measurement uncertainty				+2.2 dB / -3.6 dB					

*: Limit converted with 20 dB / decade from 10 m values to 3 m values.

The test results were calculated with the following formula:

Result [dBµV/m] = reading [dBµV] + cable loss [dB] + antenna factor [dB/m].

Test: Passed

TEST EQUIPMENT USED FOR THE TEST:
14 - 20

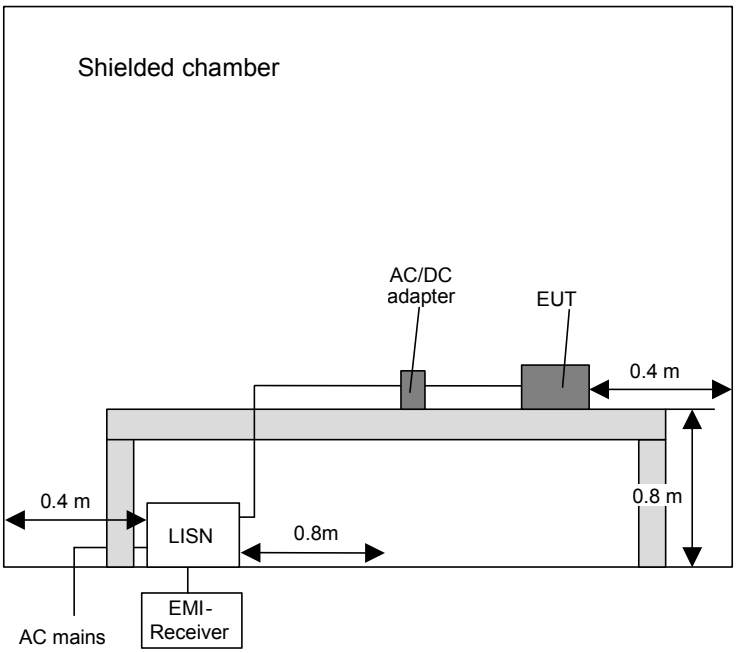
5.2 Conducted emissions on power supply lines (150 kHz to 30 MHz)

5.2.1 Method of measurement

This test will be carried out in a shielded chamber. Tabletop devices will set up on a non-conducting support with a size of 1 m by 1.5 m and a height of 80 cm above the ground plane. Floor-standing devices will be placed directly on the ground plane. The set up of the Equipment under test will be in accordance to ANSI C63.4-2009 [1].

The frequency range 150 kHz to 30 MHz will be measured with an EMI Receiver set to MAX Hold mode with peak and average detector and a resolution bandwidth of 9 kHz. A scan will be carried out on the phase (or plus pole in case of DC powered devices) of the AC mains network. If levels detected 10 dB below the appropriable limit, this emission will be measured with the average and quasi-peak detector on all lines.

Frequency range	Resolution bandwidth
150 kHz to 30 MHz	9 kHz



5.2.2 Test results (conducted emissions on power supply lines)

Ambient temperature	20 °C	Relative humidity	50 %

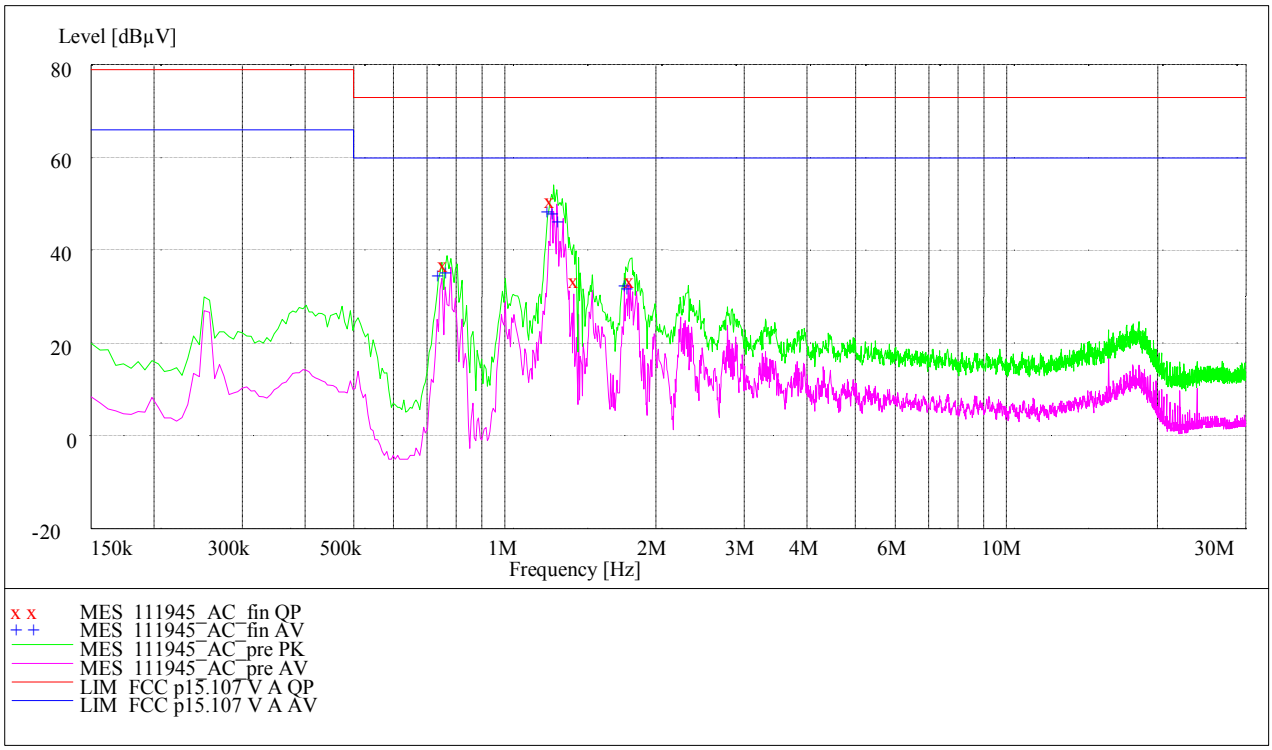
Position of EUT: The EUT was set-up on a non-conducting table of a height of 0.8 m.

Cable guide: The cable of the EUT was fixed on the non-conducting table. For further information of the cable guide refer to the pictures in annex A of this test report.

Test record: All results are shown in the following.

Supply voltage: During all measurements the EUT was supplied with 24.0 V DC by an AC / DC adaptor type FW 1598, which was supplied by 120 V AC / 60 Hz.

The curves in the diagram only represent for each frequency point the maximum measured value of all preliminary measurements which were made for each power supply line. The top measured curve represents the peak measurement and the bottom measured curve the average measurement. The quasi-peak measured points are marked by an x and the average measured points by an +.



Data record name: 111945_AC

Result measured with the quasi-peak detector:
(These values are marked in the diagram by an x)

Frequency MHz	Level dBµV	Transducer dB	Limit dBµV	Margin dB	Line	PE
0.7692	37.8	0.6	73.0	35.2	N	FLO
1.2561	51.7	0.6	73.0	21.3	L1	FLO
1.4019	34.3	0.6	73.0	38.7	N	FLO
1.7934	34.5	0.7	73.0	38.5	L1	FLO
Measurement uncertainty				+3.6 dB / -4.5 dB		

Data record name: 111945_AC_fin QP

Result measured with the average detector:
(These values are marked in the diagram by an +)

Frequency MHz	Level dBµV	Transducer dB	Limit dBµV	Margin dB	Line	PE
0.7476	35.5	0.6	60.0	24.5	N	FLO
0.7800	36.1	0.6	60.0	23.9	N	FLO
1.2399	49.6	0.6	60.0	10.4	L1	FLO
1.2732	48.8	0.6	60.0	11.2	N	FLO
1.3065	46.8	0.6	60.0	13.2	N	FLO
1.7655	33.0	0.7	60.0	27.0	L1	FLO
1.7826	32.5	0.7	60.0	27.5	N	FLO
Measurement uncertainty				+3.6 dB / -4.5 dB		

Data record name: 111945_AC_fin AV

Test: Passed

TEST EQUIPMENT USED FOR THE TEST:
1 - 4, 20

6 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

No.	Test equipment	Type	Manufacturer	Serial No.	PM. No.	Cal. Date	Cal. due
1	Shielded chamber M4	-	Siemens AG	B83117-S1-X158	480088	Weekly verification (system cal.)	
2	EMI Receiver	ESIB 26	Rohde & Schwarz	1088.7490	481182	02/08/2010	02/2012
3	LISN	NSLK8128	Schwarzbeck	8128161	480138	05/07/2010	05/2012
4	High pass filter	HR 0.13-5ENN	FSY Microwave Inc.	DC 0109 SN 002	480340	Weekly verification (system cal.)	
14	Open area test site	-	Phoenix Test-Lab	-	480085	Weekly verification (system cal.)	
15	Measuring receiver	ESIB7	Rohde & Schwarz	100304	480521	03/15/2010	03/2012
16	Controller	HD100	Deisel	100/670	480139	-	-
17	Turntable	DS420HE	Deisel	420/620/80	480087	-	-
18	Antenna support	AS615P	Deisel	615/310	480086	-	-
19	Antenna	CBL6111 D	Chase	25761	480894	09/18/2008	09/2011
20	EMI Software	ES-K1	Rohde & Schwarz	-	480111	-	-
29	Fully anechoic chamber M20	-	Albatross Projects	B83107-E2439-T232	480303	Weekly verification (system cal.)	
31	Measuring receiver	ESI 40	Rohde & Schwarz	100064	480355	03/17/2010	03/2012
32	Controller	MCU	Maturo	MCU/043/971107	480832	-	-
33	Turntable	DS420HE	Deisel	420/620/80	480315	-	-
34	Antenna support	AS615P	Deisel	615/310	480187	-	-
35	Antenna	CBL6112 B	Chase	2917	480447	09/28/2010	09/2013
142	RF-cable No. 36	Sucoflex 106B	Huber + Suhner	-	480865	Weekly verification (system cal.)	

7 REPORT HISTORY

Report Number	Date	Comment
F111945E1	10 August 2011	Document created
-	-	-
-	-	-

8 LIST OF ANNEXES

ANNEX A	TEST SETUP PHOTOGRAPHS	4 pages

111945_3.JPG:	Amantag Compact, test setup fully anechoic chamber
111945_2.JPG:	Amantag Compact, test setup fully anechoic chamber
111945_4.JPG:	Amantag Compact, test setup open area test site
111945_11.JPG:	Amantag Compact, test setup shielded chamber

ANNEX B	INTERNAL PHOTOGRAPHS	10 pages

111945_a.JPG:	Amantag Compact, internal view
111945_b.JPG:	Amantag Compact, internal view, internal cover removed
111945_c.JPG:	Amantag Compact, main PCB, top view
111945_j.JPG:	Amantag Compact, main PCB, top view, sub PCBs removed
111945_d.JPG:	Amantag Compact, main PCB, detail view to connectors
111945_e.JPG:	Amantag Compact, main PCB, bottom view
111945_f.JPG:	Amantag Compact, subPCB 1, top view
111945_g.JPG:	Amantag Compact, subPCB 1, bottom view
111945_i.JPG:	Amantag Compact, subPCB 2, top view, shielding removed
111945_h.JPG:	Amantag Compact, subPCB 2, bottom view

ANNEX C	EXTERNAL PHOTOGRAPHS	3 pages

111945_l.JPG:	Amantag Compact, 3-D view 1
111945_m.JPG:	Amantag Compact, 3-D view 2
111945_n.JPG:	Amantag Compact, type palte view