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# **Test Report**

Report Number: F100853E2

Applicant:

**Agrident GmbH** 

Manufacturer:

**Agrident GmbH** 

Equipment under Test (EUT):

**ABR105** 

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] **RSS-210 Issue 8 (December 2010)** Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment
- [4] **RSS-Gen Issue 3 (December 2010)** General Requirements and Information for the Certification of Radio 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.

Test engineer:	Thomas KÜHN	1. G	02 February 2011
_	Name	Signature	Date
Authorized reviewer:	Bernd STEINER	B.Sh	02 February 2011
_	Name	Signature	Date

#### RESERVATION

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# **IDENTIFICATION**

#### 1.1 Applicant

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Applicant represented during the test by the following person:	-

### 1.2 Manufacturer

Name:	Agrident GmbH
Address:	Steinklippenstraße 10 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

**PHOENIX TESTLAB GmbH** The tests were carried out at:

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.

Test engineer: Thomas KÜHN Date of issue: 02 February 2011 F100853E2 100853 Report Number: page 4 of 23 Order Number:



# 1.4 EUT (Equipment Under Test)

Test object: *	134.2 kHz RFID module for animal identification
Type: *	ABR105
FCC ID: *	QG2ABR105
IC: *	6252A-ABR105
Article number: *	1201
Serial number: *	3106701097
Hardware version: *	В
Software version: *	1.05
Highest internal frequency: *	15.5672 MHz

# 1.5 Technical data of equipment

Equipment category: *	Class 1 equipment with dedicated antenna					
Receiver class: *	2					
Channel spacing: *	Not applie	cable (one ch	annel oper	ation)		
Alignment range: *	Not appli	cable (one ch	annel oper	ation)		
Switching range: *	Not applicable (one channel operation)					
Antenna: *	ANT002					
Antenna area: *	0.0029 m <sup>2</sup>					
Modulation: *	AM (by passive TAG)					
Bit rate of transmitter: *	r: * -					
Supply Voltage: *	U <sub>nom</sub> =         3.3 V DC         U <sub>min</sub> =         2.5 V DC         U <sub>max</sub> =         4.2 V DC					
Temperature range: *	-20 °C + 60 °C					
Ancillaries to be tested with:	Agrident evaluation board EVA 105, HDX and FDX-B transponder					
* -						

<sup>\*</sup> declared by the applicant.

#### The following external I/O cables were used:

Identification (at EVA 105)	Connector		Length
	EUT	Ancillary	
DC in	Two pole customised connector	-	2.0 m *
RS232	9 pole D-sub connector	-	Not used
Antenna port	Three pole terminal block	-	0.2 m

<sup>\*:</sup> Length during the test if no other specified.



#### 1.6 Dates

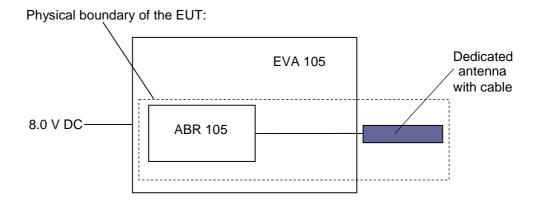
Date of receipt of test sample:	11 November 2010
Start of test:	26 January 2011
End of test:	27 January 2011

## 2 OPERATIONAL STATES

The EUT is intended to be integrated into mobile battery powered devices like PDAs or handheld PCs. For testing the module was mounted on an evaluation board (EVA 105), which allows to feed the power supply to the module and provided all connectors.

As pre-tests have shown, no measurable differences between reading a TAG or not were found. The transmitters of the module was permanently operational when powered on and co-located to the receiver, so no receiver spurious emissions were measured.

The spurious emission measurement was carried with the dedicated antenna. During the tests the test sample was powered with 3.3 V via the evaluation board, which was powered with 8 V DC.





# 3 ADDITIONAL INFORMATION

The EUT is intended to be used in handheld applications. Therefore all radiated tests were carried out in three orthogonal directions to cover hand held applications. The results in this test report are showing the maximum of these three measurements.

# **4 OVERVIEW**

Application	Frequency range [MHz]	FCC 47 CFR Part 15 section	RSS 210, Issue 7 [3] or	Status	Refer page
	range [ivii iz]	[2]	RSS-Gen, Issue 2 [4]		
Radiated emissions	0.009 - 1,000	15.205 (a) 15.209 (a)	2.5 [3]	Passed	8 et seq.
Conducted emissions on supply line	0.15 - 30	15.207 (a)	7.2.2 [4]	Not applicable*	-
99 % bandwidth	134.2 kHz	-	4.6.1 [4]	Passed	Annex D

<sup>\*</sup> EUT is intended to be implemented into battery-powered devices.



# 5 METHODS OF MEASUREMENT

#### 5.1 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):

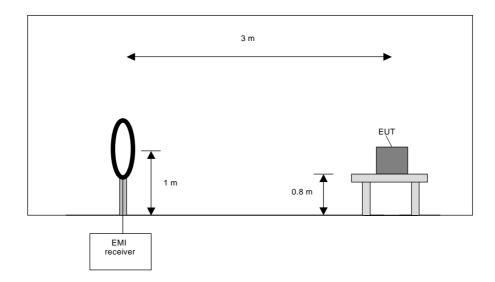
In the first stage a preliminary measurement will be performed in a shielded room with a measuring distance of

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).

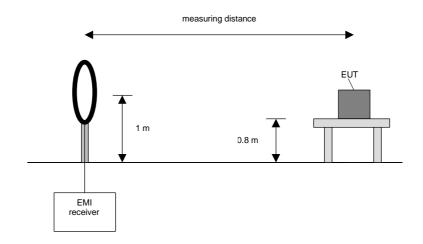
#### Final measurement (9 kHz to 30 MHz):

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).

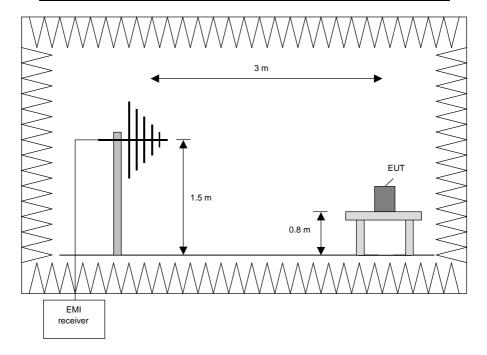
#### **Preliminary measurement (30 MHz to 1 GHz)**

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  $^{\circ}$  to 360  $^{\circ}$ .

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:

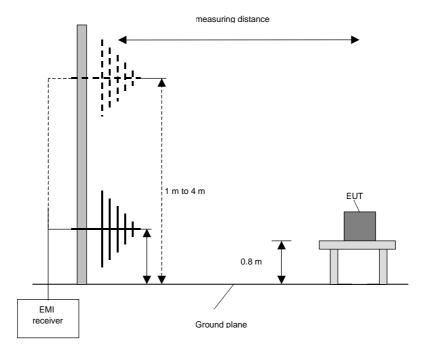
- 1. Monitor the frequency range at horizontal polarisation and a EUT azimuth of 0 °.
- 2. Manipulate the system cables within the range to produce the maximum level of emission.
- 3. Rotate the EUT by 360 ° to maximize the detected signals.
- 4. Make a hardcopy of the spectrum.
- 5. Measure the frequency 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].

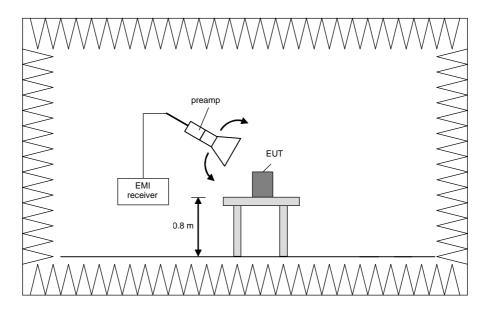
#### Preliminary measurement (1 GHz to 40 GHz)

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



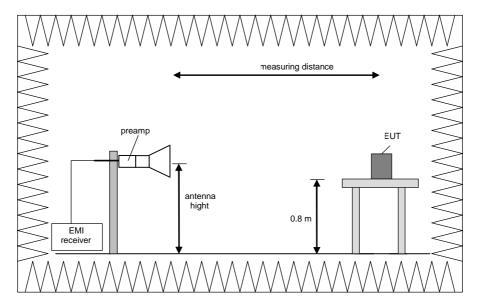


#### Final measurement (1 GHz to 40 GHz)

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 beamwidth.

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



# **6 TEST RESULTS**

#### 6.1 Radiated emissions

#### 6.1.1 Preliminary radiated emission measurement (9 kHz to 30 MHz)

Ambient temperature   20 C  Relative number   37	Ambient temperature	20 °C	Relative humidity	37 %
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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 of the EUT is running vertically to the false floor. For detail

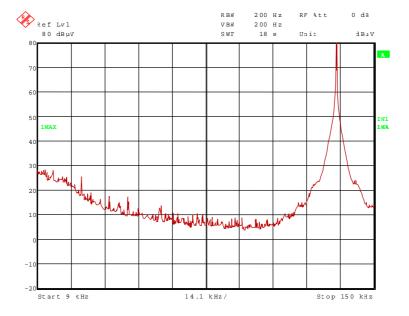
information of test set-up and the cable guide refer to the photographs in annex

A of this test report.

Test record: All results are shown in the following.

Supply voltage: During all measurements the EUT were supplied with 3.5 via the EVA 105.

#### 100853 14.wmf: Spurious emissions from 9 kHz to 150 kHz:

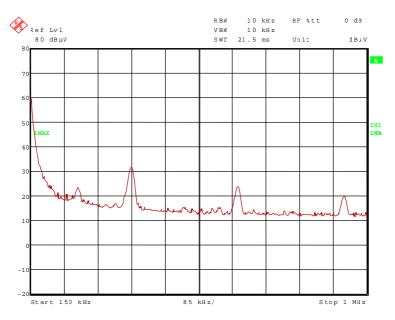


TEST EQUIPMENT USED FOR THE TEST:

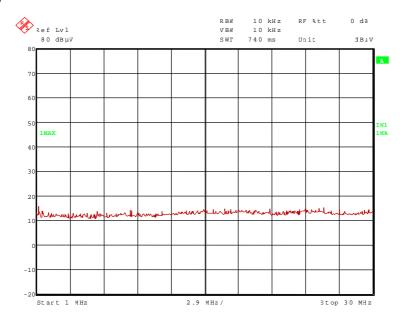
29, 31 - 35, 133



100853 15.wmf: Spurious emissions from 150 kHz to 1 MHz:



100853 16.wmf: Spurious emissions from 1 MHz to 30 MHz:



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

134.200 kHz, 268.400 kHz, 402.600 kHz, 671.000 kHz, 939.400 kHz and 1207.800 kHz.

No frequencies were found inside the restricted bands during the preliminary radiated emission test.

These frequencies have to be measured on the open area test site. The result is presented in the following.



#### 6.1.2 Preliminary emission measurement (30 MHz to 1 GHz)

Ambient temperature	20 °C	Relative humidity	35 %
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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 of the EUT is running vertically to the false floor. For detail

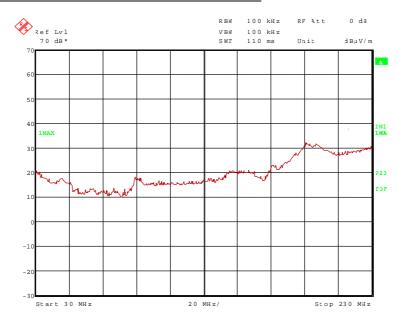
information of test set-up and the cable guide refer to the photographs in annex

A of this test report.

Test record: All results are shown in the following.

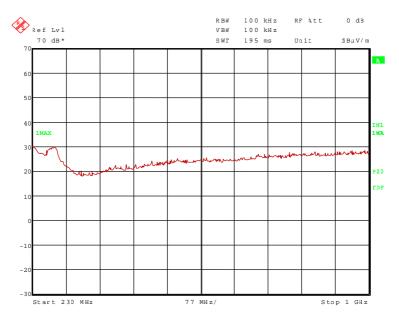
Supply voltage: During all measurements the EUT were supplied with 3.5 via the EVA 105.

#### 100853\_12.wmf: Spurious emissions from 30 MHz to 230 MHz:





100853 13.wmf: Spurious emissions from 230 MHz to 1 GHz:



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

89.622 MHz, 93.546 MHz and 228.038 MHz.

The following frequency was found inside the restricted bands during the radiated emission test: 278.541 MHz.

These frequencies have to be measured on the open area test site. The result is presented in the following.

TEST EQUIPMENT USED FOR THE TEST:

29, 31 - 35, 142



#### 6.1.3 Final radiated emission test (9 kHz to 30 MHz)

Ambient temperature 5 °C Relative humidity 60 %

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 and 10 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: The test was carried out in normal operation mode of the EUT (with reading

TAGs). All results are shown in the following.

Supply voltage: The EUT was supplied with 3.5 V DC via the EVA 105.

Test results: The test results were calculated with the following formula:

Result  $[dB\mu V/m] = reading [dB\mu V] + antenna factor [dB/m]$ 

Results with measuring distance of 3 m							
Frequency	Result Limit Margin Detector Readings Antenna fac					Antenna factor *2	
kHz	dBµV/m	dBμV/m	dB		dΒμV	dB/m	
134.200	58.3	105.0 * <sup>1</sup>	46.7	AV	38.3	20.0	
268.400	42.3	99.0 * <sup>1</sup>	56.7	AV	22.3	20.0	
402.600	46.2	95.5 * <sup>1</sup>	49.3	AV	26.2	20.0	
671.000	53.0	71.1 * <sup>1</sup>	18.1	QP	33.0	20.0	
939.400	48.1 68.1 * <sup>1</sup> 20.0 QP 28.1 20.0						
1207.800	Signal was below the noise floor of the system						
Results with measuring distance of 10 m							
Frequency	Result	Limit	Margin	Detector	Readings	Antenna factor *2	
kHz	dBµV/m	dBµV/m	dB		dΒμV	dB/m	
134.200	34.5	85.0 * <sup>1</sup>	50.5	AV	14.5	20.0	
268.400	Signal was I	pelow the noi	se floor of the	e system			
402.600	Signal was below the noise floor of the system						
671.000	Signal was below the noise floor of the system						
939.400	Signal was I	pelow the noi	se floor of the	e system			
1207.800	Signal was I	pelow the noi	se floor of the	e system	·		
Measu	rement uncer	tainty		+:	2.2 dB / -3.6 dB		

<sup>\*1:</sup> Limit corrected with 40 dB / decade

Test: Passed

#### TEST EQUIPMENT USED FOR THE TEST:

4, 9, 133

<sup>\*2:</sup> Cable loss included



#### 6.1.4 Final emission measurement (30 MHz to 1 GHz)

Ambient temperature 20 °C	Relative humidity 32 %
---------------------------	------------------------

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

Cable guide: All cables of the EUT were fixed on the wooden table. For further information of

the cable guide refer to the pictures in annex A of this test report.

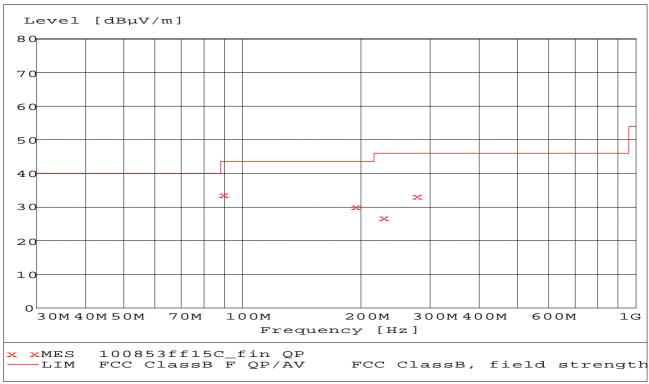
Test record: The test was carried out in normal operation mode of the EUT as described

under clause 3 of this test report. All results are shown in the following.

Supply voltage: During all measurements the EUT were supplied with 3.5 via the EVA 105.

Test results: The test results were calculated with the following formula:

Result  $[dB\mu V/m]$  = reading  $[dB\mu V]$  + cable loss [dB] + antenna factor [dB/m]



Data record name: 100853ff15C



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 measuring detector is 1 second.

#### Result measured with the quasipeak detector:

(This value is marked in the diagram by an x)

Spurious emissions outside restricted bands									
Frequency	Result	Limit	Margin	Readings	Antenna factor	Cable loss	Height	Azimuth	Pol.
MHz	dBµV/m	dBµV/m	dB	dΒμV	dB/m	dB	cm	deg	
89.622	33.9	43.5	9.6	23.0	9.8	1.1	175.0	157.0	Hor.
93.546	30.2	43.5	13.3	18.6	10.5	1.1	150.0	112.0	Hor.
228.038	27	46.0	19.0	15.2	10.2	1.6	150.0	337.0	Hor.
Spurious emissions in restricted bands									
Frequency	Result	Limit	Margin	Readings	Antenna factor	Cable loss	Height	Azimuth	Pol.
MHz	dBµV/m	dBµV/m	dB	dΒμV	dB/m	dB	cm	deg	
278.541	33.2	46.0	12.8	18.8	12.5	1.9	100.0	67.0	Hor.
N	Measurement uncertainty				-	-2.2 dB / -	3.6 dB		

The test results were calculated with the following formula:

Result  $[dB\mu V/m]$  = reading  $[dB\mu V]$  + cable loss [dB] + antenna factor [dB/m]

Test: Passed

TEST EQUIPMENT USED FOR THE TEST:

14 - 20

F100853E2 100853 Test engineer: Thomas KÜHN Report Number: page 21 of 23 Date of issue: 02 February 2011 Order Number:



# 7 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

No.	Test equipment	Type	Manufacturer	Serial No.	PM. No.	Cal. Date	Cal. due
4	Outdoor test site	-	Phoenix Test-Lab	-	480293	Six-month v	rerification
6	Spectrum analyser	FSU	Rohde & Schwarz	200125	480956	04/15/2010	04/2012
9	Measuring receiver	ESPC	Rohde & Schwarz	843756/006	480150	03/12/2010	03/2012
14	Open area test site	-	Phoenix Test-Lab	-	480085	Weekly ve (system	
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 A	Chase	1643	480147	08/01/2007	08/2012
20	EMI Software	ES-K1	Rohde & Schwarz	-	480111	-	-
25	Loop Antenna Ø = 110 mm	-	Phoenix Test-Lab	-	410084	Six-month v (system	
29	Fully anechoic chamber M20	-	Albatross Projects	B83107-E2439- T232	480303	Weekly ve (system	
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	09/2015
133	Loop antenna	HFH2-Z2	Rohde & Schwarz	832609/014	480059	03/10/2010	03/2012
142	RF-cable No. 36	Sucoflex 106B	Huber + Suhner	-	480865	Weekly ve (system	

# **8 REPORT HISTORY**

Report Number	Date	Comment
F100853E2	02 February 2011	Document created
-	-	-
-	-	-



# 9 LIST OF ANNEXES

ANNEX A TEST SETUP PHOTOGRAPHS 4 pages

100853\_38.jpg ABR105, test set-up fully anechoic chamber 100853\_30.jpg ABR105, test set-up fully anechoic chamber 100853\_17.jpg ABR105, test set-up outdoor test site ABR105, test set-up open area test site

ANNEX B EXTERNAL PHOTOGRAPHS - pages

Because the EUT is a module, which will be implemented into a final application,

no external Photographs were available.

ANNEX C INTERNAL PHOTOGRAPHS 5 pages

100853\_a.jpg ABR105 with ANT002 mounted on EVA 105 100853\_b.jpg ABR105 mounted on EVA 105, top view

 100853\_c.jpg
 EVA 105, bottom view

 100853\_f.jpg
 ABR105, top view

 100853\_e.jpg
 ABR105, bottom view

ANNEX D ADDITIONAL RESULTS FOR INDUSTRY CANADA 2 Pages