

Test report 99725931 - rev 1.0

based on:
FCC Part 15 Subpart C, section 15.209 (10-1-05
Edition)
RSS-210 (Issue 6, September 2005) section 2.6

Avalanche Beacon
Mammut
Pulse Barryvox

Contents

MAIN MODULE.....	3
1 INTRODUCTION	3
2 PRODUCT	4
3 TEST SCHEDULE	4
4 PRODUCT DOCUMENTATION	5
5 OBSERVATIONS AND COMMENTS.....	5
6 SUMMARY	6
7 CONCLUSIONS	7
TEST RESULTS MODULE.....	8
1 SUMMARY	9
2 EMISSION TESTS	10
2.1 <i>Field strength of intentional signal</i>	10
2.2 <i>Field strength of unwanted emissions (<30 MHz)</i>	11
USED TEST EQUIPMENT MODULE.....	12
REVISION HISTORY	13

This report comprises of four modules. The total number of pages exclusive of the pages enclosed in the additional information module is: 13

Main module

1 Introduction

This report contains the result of tests performed by:

Telefication B.V.
Edisonstraat 12a
6902 PK Zevenaar
The Netherlands

Telefication complies with the accreditation criteria for test laboratories as laid down in ISO/IEC 17025:1999. The accreditation covers the quality system of the laboratory as well as the specific activities as described in the authorized annex bearing the accreditation number L021 and is granted on 30 November 1990 by the Dutch Council For Accreditation (RvA: Raad voor Accreditatie). The copyright of this test report is owned by Telefication bv and may not be reproduced except in full without the written approval of Telefication bv.

Ordering party:

Company name	:	Ascom (Switzerland) Ltd.
Address	:	Eichtal
Zipcode	:	CH-8634
City/town	:	Hombrechtikon
Country	:	Switzerland
Date of order	:	9 March 2006

2 Product

A sample of the following product was submitted for testing:

Product name	:	Avalanche Beacon
Product category	:	Intentional radiators
Manufacturer	:	Ascom (Switzerland) Ltd.
Trade mark	:	Mammut
Type designation	:	Pulse Barryvox
FCC ID	:	UD9PULSE-B-462002
Emission designator	:	P0N
Hardware version	:	--
Software version	:	R 1.60
Serial number	:	0621912397 and 0621912398

3 Test schedule

Tests were carried out in accordance with the specification detailed in chapter 6 "Summary" of this report.

Tests were carried out at the following location:

- Telefication, Zevenaar

The sample of the product was received on:

- 6 May 2006

Tests were carried out on:

- 6 and 7 July 2006
-

4 Product documentation

For production of this report the following product documentation was used:

Description	Date	Identification
NBV Monitor 2 Manual	29/05/2006	New Barryvox NBV monitor manual version 0.1
Pulse Barryvox, Parameters	01/06/2006	--
Pulse Barryvox Short instructions for the test	31/05/2006	--
Schematics	30/05/2006	462010-00000_1SZ_001_00
PCB information	28/04/2006	46201-00000 topside (version 4) 46201-00000 bottomside (version 3)
Schematics	30/05/2006	462010-00000_1SZ_001_00

5 Observations and comments

The Pulse Barryvox is an avalanche beacon that transmits on 457 kHz and in the 902 - 928 MHz band. This report only describes the tests on the 457 kHz transmitter and receiver

The 457 kHz transmitter was set to transmit continuously during testing.

6 Summary

The product is intended for use in the following application area:

- Avalanche beacon

The sample was tested according to the following specification:

- FCC Part 15 Subpart C, section 15.209 (10-1-05 Edition)
 - RSS-210 (Issue 6, September 2005), section 2.6
-

7 Conclusions


The sample of the product showed **NO NON-COMPLIANCES** to the specification stated in chapter 6 of this report.

The results of the tests as stated in this report, are exclusively applicable to the product item as identified in this report. Telefication does not accept any responsibility for the results stated in this report, with respect to the properties of product items not involved in these tests.

All tests are performed by:

name : S. J. van Spijker

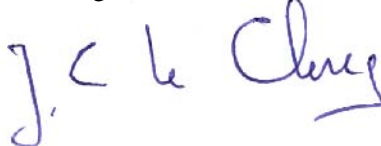
function : Test Engineer

signature : 

Review of test methods and report by:

name : ing. J. C. le Clercq

function : Test Engineer

signature : 

The above conclusions have been verified by the following signatory:

date : 21 September 2006

name : J. P. van de Poll

function : Co-ordinator Test Group

signature : 

Test results module

1 Summary

Test Form: FCC Part 15; subpart C; sections 15.209
Summary

According to FCC Part 15; subpart C; sections 15.209 the following tests have been performed:

Port	Reference	Phenomena	Result
Enclosure	section 15.209	Radiated emissions	P

Results:

P = pass
F = fail

NA = not applicable
NP = not performed

2 Emission tests

2.1 Field strength of intentional signal

Compliance standard : FCC part 15, subpart C, section 15.209.
RSS-210 (Issue 6, Sept 2005) section 2.6

Method of test : ANSI C63.4-2001, sections 5.3 & 8.2.1; FCC part 15, subpart A, section 15.31 (f)(2), 15.33, 15.35.
RSS-GEN (Issue 6, Sept 2005) section 4.7 and 4.9

Justification : Because of strong ambient signals, a measuring distance of 3 m has been chosen. An inverse linear distance extrapolation factor of -40 dB/decade has been applied to determine results at a distance of 300 m.
The EUT transmitting frequency was 457 kHz (worst case; highest level).

Test results :

Measurement in front of EUT when transmitting			
Orthogonal Plane	Test result @ 3 m distance (dB μ V/m) (Peak*)	Extrapolation to 300 m distance (dB μ V/m) (Peak*)	Limit @ 300 m distance (dB μ V/m) (Average)
X	56.0	-24.0	14.4
Y	87.17	7.17	14.4
Z	71.5	-8.5	14.4

*) Since the transmit duty cycle in test mode is 100 % a peak measurement was performed.

Test equipment:

Test equipment used: (Item numbers)	2, 6
-------------------------------------	------

Item numbers refer to the used test equipment module.

2.2 Field strength of unwanted emissions (< 30 MHz)

Compliance standard : FCC part 15, subpart C, section 15.209.
RSS-210 (Issue 6, Sept 2005) section 2.6

Method of test : ANSI C63.4-2001, sections 5.3 & 8.2.1; FCC part 15, subpart A,
section 15.31 (f)(2), 15.33, 15.35.
RSS-GEN (Issue 6, Sept 2005) section 4.7, 4.8 and 4.9

Justification : Because of strong ambient signals, a measuring distance of 3 m
has been chosen. An inverse linear distance extrapolation factor of
-40 dB/decade has been applied to determine results at a distance
of 30 or 300 meters. An exploratory measurement was also
performed to find spurious emissions. During these measurements,
no EUT related signals were found.

Test results :

Orthogonal plane: X, Y, Z			
Frequency band	Test result @ 3 m distance (dB μ V/m) (QP)	Extrapolation to 30/300 m distance (dB μ V/m)	Limit (μ V/m)
9 – 490 kHz	--	--	2400/F(kHz) μ V/m @ 300m
490 – 1705 kHz	--	--	24000/F(kHz) μ V/m @ 30m
1.705 – 30 MHz	--	--	30 μ V/m @ 30m

No unwanted emissions in the frequency range 9 kHz - 30 MHz were detected during the exploratory and compliance measurements in either transmit or receive mode. The emissions on other frequencies than 457 kHz are not originating from the EUT.

Test equipment:

Test equipment used: (Item numbers)	2, 6
-------------------------------------	------

Item numbers refer to the used test equipment module.

Used test equipment module

This module contains the list of test equipment used.

Ref	Description	Telefication ident.	Manufacturer	Model
1	Test receiver	TE 00205	R & S	ESH3
2	Active loop antenna	TE 00746	R & S	HFH 2-Z2
3	Test receiver	TE 00091	R & S	ESV(P)
4	Logger/bow-tie antenna	TE 00700	EMCO	3143
5	Artificial Mains Network (AMN)	TE 00208	R & S	ESH3-Z5
6	Spectrum Analyzer	TE 00481	HP	8563E
7	Pulse/function generator	TE 000347	HP	8111A

Revision History

REVISION	DATE	REMARKS
1.0	13 September 2006	In chapter 2.2 “Field strength of unwanted emissions (< 30 MHz)” did not include the receiver spurious emissions results as required by the RSS-GEN paragraph 4.8.
