

## **Test report** **20082395300**

based on:  
FCC Part 15 Subpart C, section 15.223  
(10-1-08 Edition)

Vehicular mounted device for timing purposes  
during race events  
AMB Identification & Timing B.V.  
TnetX Pro Communicator Lite

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This report comprises of three modules. The total number of pages is: 12

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## Main module

### 1 Introduction

This report contains the result of tests performed by:

Telefication bv  
Edisonstraat 12a  
6902 PK Zevenaar  
The Netherlands

*Telefication complies with the accreditation criteria for test laboratories as laid down in ISO/IEC 17025:2005. 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 : AMB i.t. B.V.  
Address : Zuiderhoutlaan 4  
Zipcode : 2012 PJ  
City/town : Haarlem  
Country : The Netherlands  
Date of order : 10 April 2008

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## 2 Product

A sample of the following product was submitted for testing:

Product name	:	Vehicular mounted device for timing purposes during race events
Product category	:	Intentional radiators
Manufacturer	:	AMB Identification & Timing B.V.
Trade mark	:	AMB Identification & Timing B.V.
Type designation	:	TnetX Pro Communicator Lite
FCC ID	:	NXYTPCL
Emission designator	:	
Hardware version	:	--
Software version	:	--
Serial number	:	--

## 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:

- 15 January 2009

Tests were carried out between:

- 15 and 30 January 2009
-

## 4 Product documentation

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

Description	Date	Identification
Installation guide TnetX Host	February 2008	AMB I-T- identification & timing

The above-mentioned documentation will be filed at Telefication for a period of 10 years following the issue of this report.

## 5 Observations and comments

The sample is a vehicular mounted device for timing purposes during race events, with working frequency of 6.78 MHz.

The sample is battery powered.

## 6 Summary

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

VEHICULAR

The sample was tested according to the following specifications:

FCC Part 15 Subpart C, section 15.223 (10-1-08 Edition)

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## 7 Conclusions

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

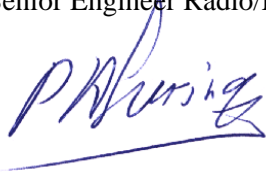
The results of the tests as stated in this report, are exclusively applicable to the product items as identified in this test report. Telefication accepts no responsibility for any stated properties of product items in this test report, which are not supported by the tests as specified in section 6 “*Summary*”.

All tests are performed by:

name : ing. P.A. Suringa

function : Senior Engineer Radio/EMC

signature :

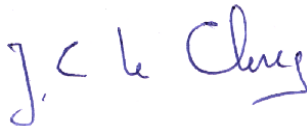


Review of test methods and report by:

name : ing. J.C. le Clercq

function : Test Engineer

signature :



The above conclusions have been verified by the following signatory:

date : 23 March 2009

name : ing. P.A.J.M. Robben

function : Co-ordinator Test Group

signature :



## Test results module

### 1 Summary

According to FCC Part 15 subpart C, section 15.223 the following tests have been performed:

Port	Reference	Phenomena	Result
Enclosure	section 15.223 (a)	Radiated emissions within the band 1.705 – 10 MHz	P
Enclosure	section 15.223 (b)	Radiated emissions outside the band 1.705 – 10 MHz	P

Results:

P = pass  
F = fail

NA = not applicable  
NP = not performed

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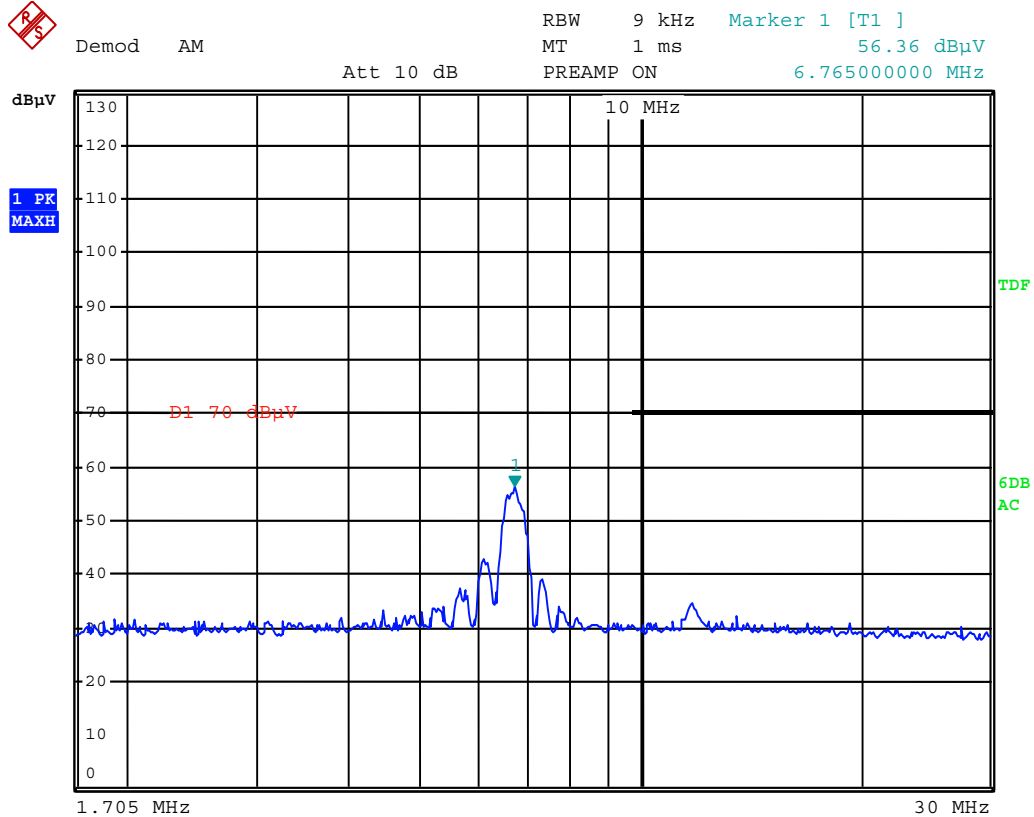
## 2 Emission tests

### 2.1 Field strength of emissions (< 30 MHz)

Compliance standard : FCC part 15, subpart C, section 15.223 (a) & (b).

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.

Test results :



Remark 1: when applying an inverse linear distance extrapolation factor of 40 dB for the measuring distance of 3 meter, the field strength is  $56.36 - 40 = 16.36$  dBµV/m. This is less than the limit of 38 dBµV/m.

Remark 2; The limit of 38 dBµV/m has been derived from the bandwidth (in kHz) of the signal divided by the center frequency in MHz i.e.  $500/6.28 = 80$  µV/m (= 38 dBµV/m @ 30 m distance).

Remark 3: in the plot the spurious limit in the range 10 – 30 MHz is modified for an inverse linear distance extrapolation factor of 40 dB (at 30 m).



Measurement uncertainty	+1.5 / -1.6 dB
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Test equipment used: (Item numbers)	1, 2, 7
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Item numbers refer to the used test equipment module.

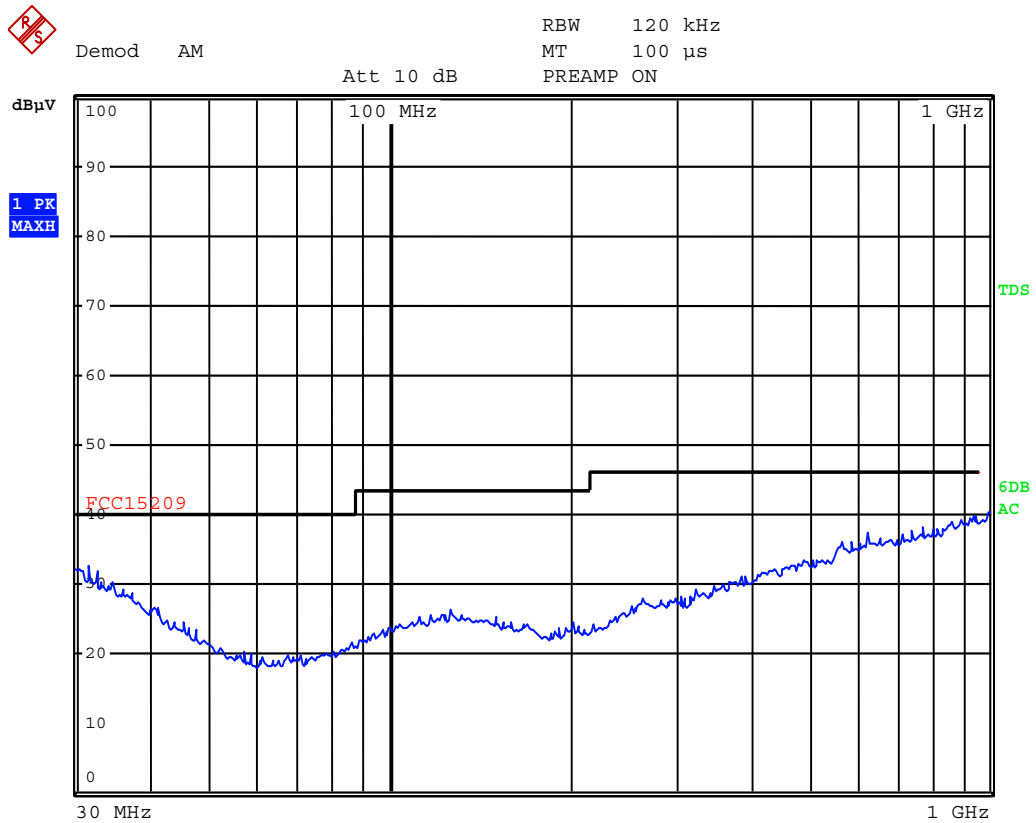
## 2.2 Field strength of unwanted emissions ( $\geq 30$ MHz)

Compliance standard : FCC part 15, subpart C, section 15.223 (b)

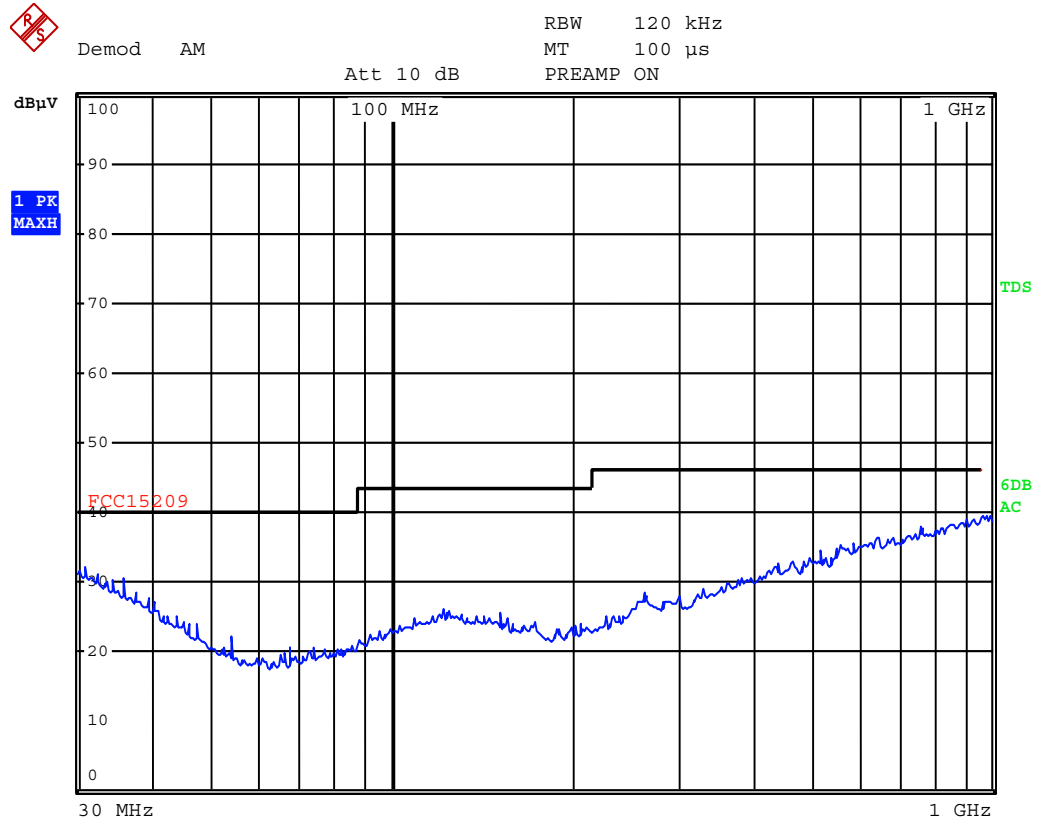
Method of test : ANSI C63.4-2001, sections 5.4, 8.2.3 & 8.3.1.2; FCC part 15, subpart A, section 15.31 (f)(1), 15.33, 15.35.

Test results

*Horizontal polarization*



*Vertical polarization*



Measurement uncertainty	Horizontal polarization	
	30 – 200 MHz	4.5 dB
	200 – 1000 MHz	3.6 dB
	Vertical polarization	
	30 – 200 MHz	5.4 dB
	200 – 1000 MHz	4.6 dB

Test equipment used: (Item numbers)	2, 7, 8
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Item numbers refer to the used test equipment module.

## Used test equipment module

Ref	Description	ID	Manufacturer	Model
1	Active loop antenna	TE 00746	R & S	HFH 2-Z2
2	Test receiver	TE 00091	R & S	ESCI
3	Large triple loop antenna	TE 01066	Telefication	--
4	Logper/bow-tie antenna	TE 00700	EMCO	3143
5	Spectrum analyzer	TE 00359	HP	8563E
6	Compact anechoic chamber (CFAC)	TE 01064	Euroshield	RFD-F-100
7	Semi anechoic chamber (SAC)	TE 00861	Comtest	--
8	Bilog antenna	TE 00967	Chase	CBL6112A
9	Climate chamber	TE 00392	CTS	KK-35/70
10	Spectrum analyzer	TE 00099	HP	8562 <sup>E</sup>
11	Digital multimeter	TE 00143	HP	34401A
12	Power supply	TE 00715	Delta	E060-06