



**Installation & operation Manual
For the
NAVIGATION INTERFACE**

Reference 03 E 67288 Revision : A

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LIST OF UPDATES

Revision	Name of the issuing person	Description of the update	Date
A	E.LABRIFFE	Creation	11/24/03

TABLE OF CONTENTS

1. INTRODUCTION	3
1.1. PURPOSE	3
1.2. MANUFACTURER	3
2. INSTALLATION.....	4
2.1. RECOMMENDED CONFIGURATION :	4
2.2. DIMENSIONS OF THE EQUIPMENT (OUTLINE DRAWING)	5
2.3. MOUNTING.....	7
2.4. ELECTRIC CONNECTION	7
3. UTILIZATION	9
3.1. ACTIVATION.....	9
3.2. SELF TEST FROM THE ELT ADT406 OR FROM THE RCP.....	9
3.2.1. <i>From the ELT</i>	9
3.2.2. <i>From the Remote Control Panel (RCP)</i>	10
3.2.3. <i>Timing diagrams</i>	10
4. ELT COSPAS-SARSAT ENCODING (COSPAS-SARSAT IDENTIFICATION).....	11
5. MAINTENANCE.....	11

1. INTRODUCTION

1.1. PURPOSE

This document provides the useful information for the installation, the connection and checking related to the correct operation of the **NAVIGATION INTERFACE, P/N 01N65930-(x)**.

This equipment is designed to be used with an Emergency Locator Transmitter (ELT) model ADT406 AF/AP and connected to the plane bus type Arinc 429 HS (high speed).

The Navigation Interface scans permanently the bus in order to read the content of the position labels 310 and 311 (refresh rate 0.2s), each new acquisition is kept in memory.

When the ELT is activated (manually or automatically), it asks the Navigation Interface before any other action, and then includes the last stored position in the 406 MHz distress message.

If no position is available, the ELT then uses a position by default, in accordance to the COSPAS/SARSAT specification.

In case of power supply shortage during the crash, the interface uses its internal energy storage unit to restore the information during the activation of the ELT (no more than a few seconds are necessary).

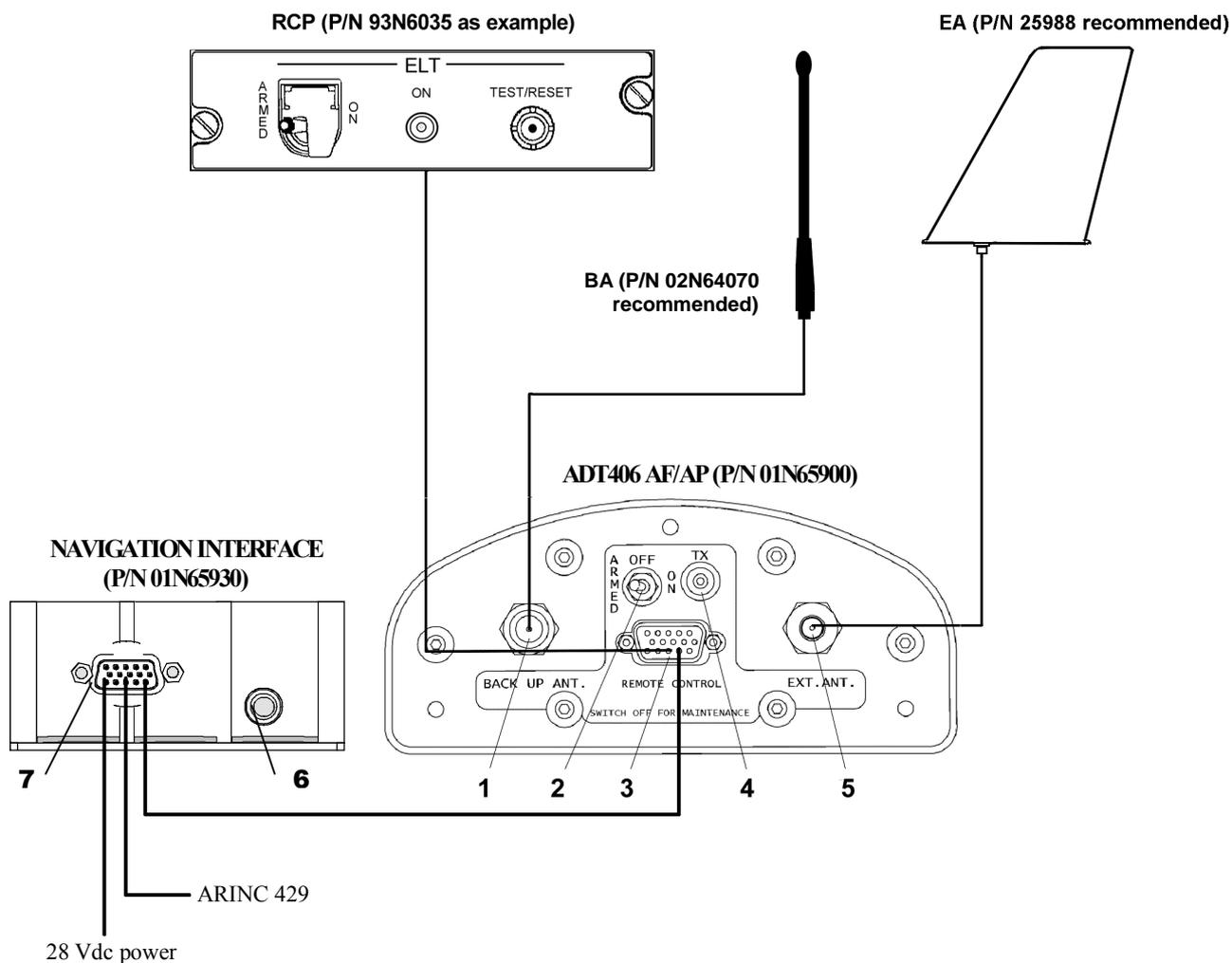
1.2. MANUFACTURER

The NAVIGATION INTERFACE, P/N 01N65930-(x) is manufactured by:

ELTA (F6614)
14, place Marcel Dassault
31702 BLAGNAC
France
www.elta.fr

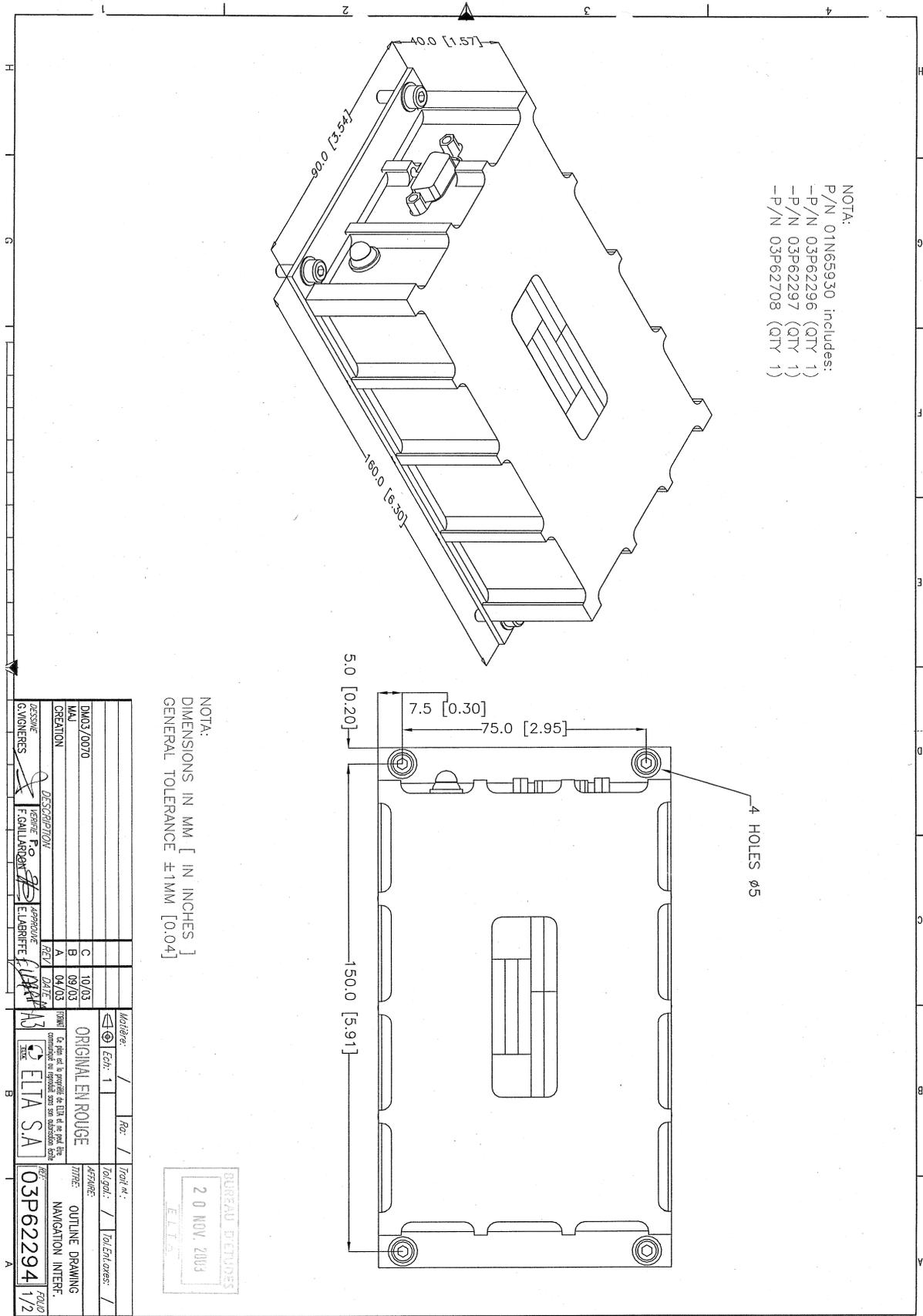
2. INSTALLATION

2.1. RECOMMENDED CONFIGURATION :



- 1 : Connector for back-up antenna (TNC)
- 2 : 3 position guarded toggle switch
- 3 : Remote connector and Navigation Interface
- 4 : ELT Operation Indicator (red LED)
- 5 : Connector for external antenna (BNC)
- 6 : Navigation Interface 3 colours operation indicator (LED)
- 7 : Connector for the ELT, the plane data bus and on board power supply.

2.2. DIMENSIONS OF THE EQUIPMENT (OUTLINE DRAWING)



2.3. MOUNTING

The Navigation Interface can be mounted in any position and on any side of the ELT.

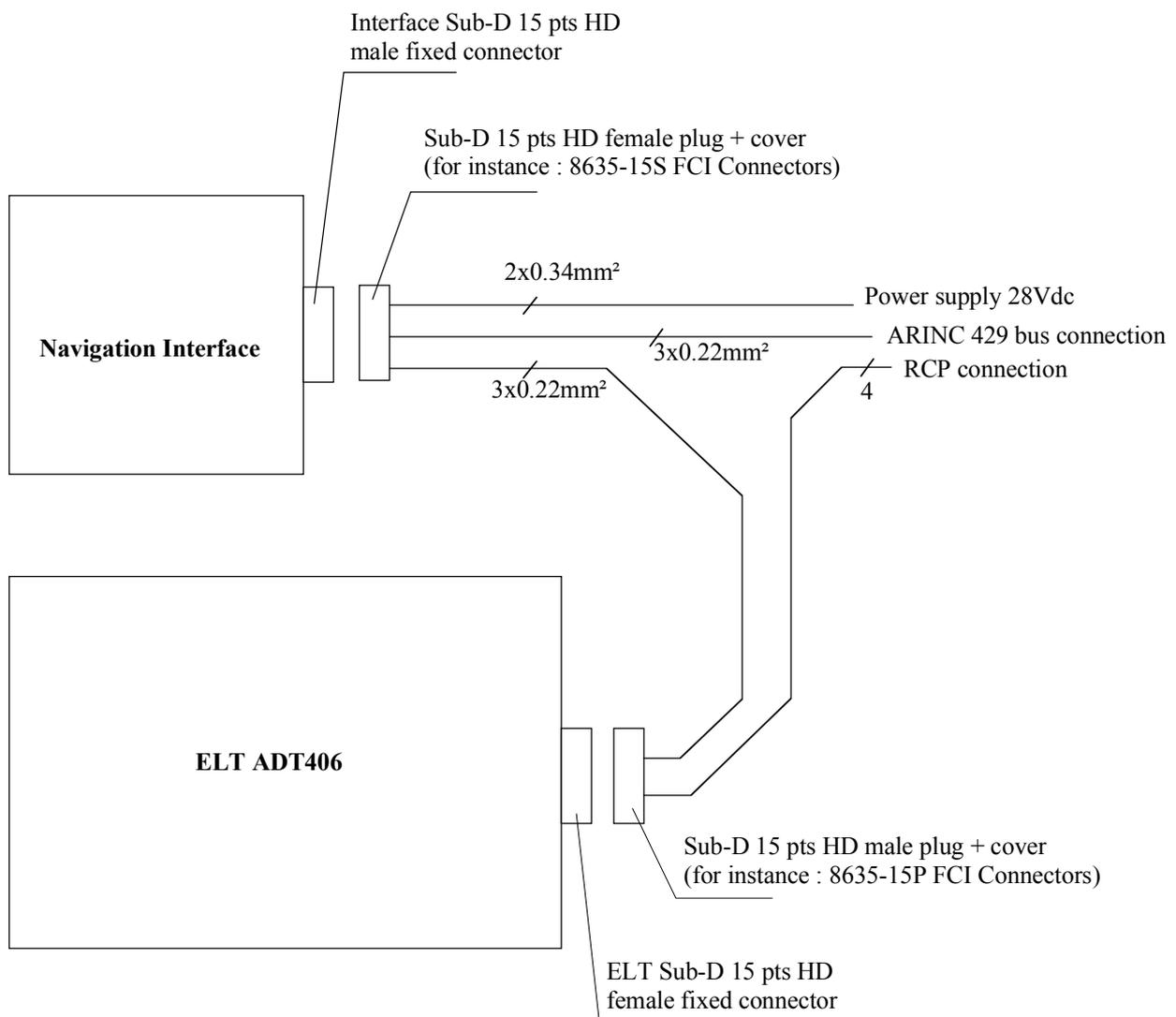
The only requirement is to have the shorter possible link between the Navigation Interface and the ELT. This is to minimise the risk of breaking or destruction of the cable during an accident. We recommend to mount the ELT and the Navigation Interface on the same primary structure to decrease the risk of cable breaking.

Fix the Navigation Interface on the aircraft with four 4 mm diameter (minimum) screws using the 4 specified holes (5 mm diameter holes at the corners of a 75 x 150 mm rectangle (+/- 1 mm)).

In case 4mm screws are used, also use 8mm diameter washers.

2.4. ELECTRIC CONNECTION

Wiring diagram (recommended gauge wire) :



Associated pinout (RCP excluded):

Signal	Connector NAVIGATION INTERFACE (Sub-D 15 HD Male)	Connector ELT (Sub-D 15 HD Female)	Terminal stud 28VDC supply plane	Bus Terminal stud ARINC 429 plane
+ 28 Vdc	1	-	Connector one +28Vdc	-
0V	2	-	Connect the associated ground	-
ARINC-HI	3	-	-	ARINC-HI
ARINC-LO	4	-	-	ARINC-LO
ARINC-REF	5	-	-	Shield
Reserved	6	-	-	-
0V-ELT	7	4	-	-
TXD	8	3	-	-
RXD	9	2	-	-
Reserved	10	-	-	-
Reserved	11	-	-	-
Reserved	12	-	-	-
Reserved	13	-	-	-
Reserved	14	-	-	-
Reserved	15	-	-	-

3. UTILIZATION

3.1. ACTIVATION

As soon as you connect the 28VDC power supply, the Navigation interface is in use.

A 3 colour light immediately pops up and indicates its state.

At the activation, a green indicator light is on for around 2 seconds, that's the self test of the Navigation Interface. The light will, then, turn to one of the following colours:

- **Green** : all the parameters are correct and position messages (in the correct format : labels 310 and 311) are available on the Arinc Bus.
- **Orange** : the Navigation Interface works but is not connected to the bus or does not find labels 310 and 311 or those labels are not correct.
- **Red** : an internal problem is detected, the equipment does not work.

3.2. SELF TEST FROM THE ELT ADT406 OR FROM THE RCP

When the ELT receives a request of self test, it forwards it to the Navigation Interface.

Through its light indicator, it gives the result of its self test and then the result of the Navigation Interface. It is the same if the order is given from the RCP.

3.2.1. From the ELT

Pull and place the ELT switch in the « ON » position, a double flashing indicator light and a double simultaneous beep show the activation (acknowledgment).

The test takes place during around 9 seconds, it is followed by the self test report of the beacon during 10s and then by the self test report of the Navigation Interface during 10s.

The ELT then undergoes a waiting condition during 20s before really starting emitting.

WARNING: The switch has to be placed back in the « OFF » or « AUTO » position during this period if it is not a real distress condition.

This self test has to be done only during the 5 first minutes of each hour, if the self test is performed outside this time frame, the local control tower has to be informed beforehand because of 121.5Mhz emission in order to avoid false alert.

3.2.2. From the Remote Control Panel (RCP)

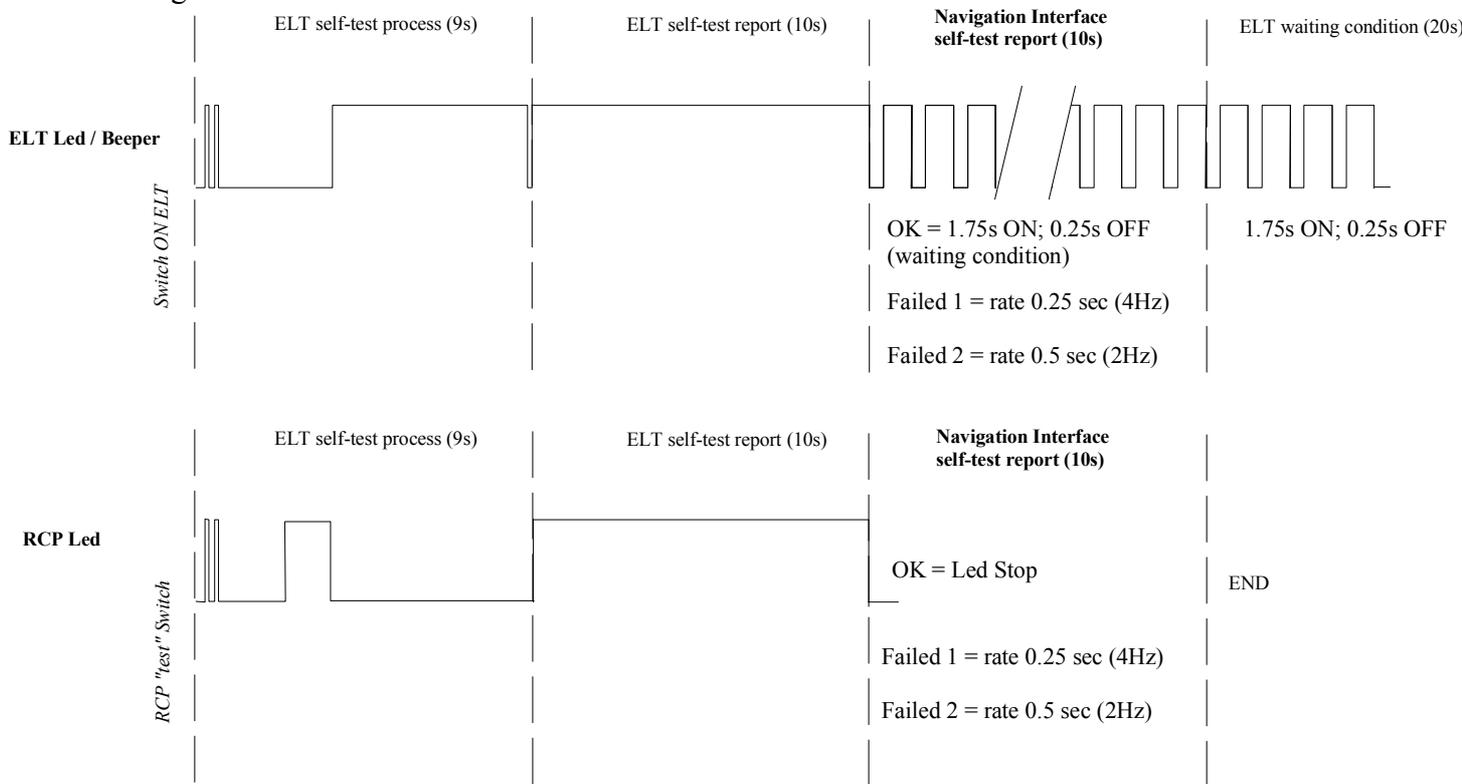
Push the « Test/Reset » button during around 2 seconds, a double blinking of the indicator light indicates that the self test has been taken into account.

The test takes place during around 9s, it is followed by the self test report of the beacon during 10s and then by the self test report of the Navigation Interface during 10s, **only in case of defect**. If the self test report of the Navigation Interface is correct then the display stops automatically after the ELT's self test report .

3.2.3. Timing diagrams

The top timing diagram represents the visible information on the ELT indicator light doubled by a synchronous sound signal.

The second timing diagram represents the visible information on the RCP indicator light.



Failure rate 1 - Frequency of 4Hz : Navigation Interface not detected by the ELT, either it is not supplied with power, or it is not connected to the ELT.

Failure rate 2 - Frequency of 2Hz : The Navigation Interface communicates with the ELT, but it is not connected to the Arinc Bus or the bus speed is not correct or 310 and 311 labels are not correct or missing.

4. ELT COSPAS-SARSAT ENCODING (COSPAS-SARSAT IDENTIFICATION).

The ELT has to be set up with « long message » in order to take into account the Navigation Interface.

In case of “short message” selection, the Navigation Interface is ignored.

The information written on the «identification / activation module» of the ELT model ADT406 allows a quick check of the encoded message format:

Homing pwr 23 dBm
9C71D21B67A00C0
▼L / 227 / EXEMPLE / 1

« L » indicates that the ELT is programmed in Long message.
(In case of short message, nothing is mentioned in this box).

5. MAINTENANCE

Check visually during the ELT maintenance operations (i.e. change of batteries) the general state of the box and of its seal.

Control the tightening of the 15 points connector (0.5 m.N).