ELTA

ORIGINAL EN ROUGE

DECLARATION OF DESIGN AND PERFORMANCES FOR 01N6590X ADT406 AF/AP ELT

Référence : **02E65151** Révision : **B**

Rédigé par :	Vérifié par :	Approuvé par :	Emis le :
C.CRESP	B. DROXLER	J.J MEVEL	12/09/02

ORIGINAL EN ROUGE

REVISION HISTORY

REV	Date	Description	
-			
A	July. 2002	CREATION (BPE)	
B	Sept., 2002	Update (include SFACT comments)	

ATA CHAPTER: 25-60	**D**ECLARATION OF **D**ESIGN AND **P**ERFORMANCE	DDP No: 02E65151 REV : B DATE : SEPT., 02

ORIGINAL EN ROUGE

TECHNICAL SPECIFICATION : **EUROCAE ED62**
ISSUE **May 1990**
EQUIPMENT DESIGNATION : **ELT**
MODEL/TYPE NUMBER(S) : **Model ADT 406 AF/AP**
VENDOR PART NUMBER(S) **01N6590(x) (x)**

MANUFACTURER : **ELTA F6614**

EQUIPMENT CLASSIFICATION : C **Non Essential**

SOFTWARE CRITICALITY : D

BRIEF TECHNICAL DESCRIPTION : **The ADT 406 AF/AP beacon is a three (3) Frequencies ELT operating on 121.5-243-406.028 MHz**
It is an Automatic Fixed (AF) basic type.
It can be connected to an external antenna, and can be Remotely controlled from a Remote Control Panel
It incorporates a back up antenna that transmit on 406 MHz only when primary antenna failure is detected.
Automatic activation direction is selectable (4 directions)

PERFORMANCE : **Performances of these equipment conforms With EUROCAE ED62 & RTCA DO-183/204 specifications.**
It meets JTSO 2C91a & 2C126 and TSO C91a & C126 Requirements

GUARANTEED WEIGHT : **Max. 1600 g (with back-up antenna).**
LIMITATIONS FOR OPERATING : **None**
LIMITATIONS FOR HANDLING : **None**
DEVIATION FROM SPECIFICATION : **None**
SAFETY/FAILURE ANALYSIS : **N/A**
QUALITY CONTROL PROCEDURE : **02E64013 (x) & 02E63747 (x)**
MAINTENANCE AND OPERATION INSTRUCTIONS : **CMM 25-60-10 latest Issue**

REMARKS : **None**

QUALIFICATION JUSTICATION / TESTS:

ORIGINAL EN ROUGE

Environment Qualification Form as per ED-14D/DO-160D for the ELT model ADT406 AF/AP, P/N 01N6590(x) (x)

DO-160D Env. Cat. : *X*A*[F1C1]A[RW]XXXSZXXXZWMXXXX

* special per ED-62 or DO-183 or DO-204

QUALIFICATION TEST DESIGNATION	ED-14D DO-160D SECTION	ED-14D / DO-160D CATEGORY	REPORT document. METHOD (S)imilarity (T)est
Temperature & altitude	4	special Eurocae ED 62/DO-183/DO-204	02E64014 (T)
In Flight Loss of Cooling	4.5.4	equipment identified to category **X** no test required	N/A
Temperature variation	5	special Eurocae ED 62/DO-183/DO-204	02E64014 (T))
Humidity	6	Equipment tested to category **A**	02E64014 (T)
Operational shocks and crash safety	7	special Eurocae ED 62/DO-183/DO-204 equipment tested to 500 g/4 ms	02E64014 (T)
Vibrations	8	Equipment tested to category **F/F1 C/C1**	02E64014 (T)
Explosion proofness	9	equipment tested to category **A**	02E64014 (T)
Waterproofness	10	equipment tested to category **RW**	02E64014 (T)
Fluid susceptibility	11	equipment identified to category **X** no test required	N/A
Sand & Dust	12	equipment identified to category **X** no test required	N/A
Fungus resistance	13	equipment identified to category **X** no test required	N/A
Salt spray	14	equipment tested to category **S**	02E64014 (T)
Magnetic effects	15	equipment tested to category **Z**	02E64014 (T)
Power input	16	equipment identified to category **X** no test required	N/A
Voltage spike	17	equipment identified to category **X** no test required	N/A
Audio frequency conducted susceptibility-power inputs	18	equipment identified to category **X** no test required	N/A
Induced signal susceptibility	19	equipment tested to category **Z**	02E64014 (T)
Radio frequency susceptibility (radiated & conducted)	20	equipment tested to category **W**	02E64014 (T)
Emission of radio frequency energy	21	equipment tested to category **M** in "ARMED" mode (normal stand-by mode) and category **M** in transmission (Note: Only F=1579.5 MHz is not compliant, +5dB)	02E64014 (T)
Lightening induced transient susceptibility	22	equipment identified to category **X** no test required	N/A
Lightening direct effects	23	equipment identified to category **X** no test required	N/A

ORIGINAL EN ROUGE

Icing Test	24	equipment identified to category **X** no test required	N/A
Electrostatic Discharge Test	25	equipment identified to category **X** no test required	N/A
Flame	None	special Eurocae ED 62/DO-183/DO-204	02E64014 (T)
Autonomy	None	special Eurocae ED 62/DO-183/DO-204	02E64014 (T)

GENERAL PARAMETERS

PARAMETER	SELECTED VALUE	REMARKS
Operating temperature	-20°C; +55°C	Class 2
Storage temperature	-55°C ; +85°C	in accordance with ED62 +80° for battery packs
applicable standard	EUROCAE ED 62	for the tests applicable to "AF" basic type ELT
Batteries used	2 packs of 2 "D" cells in serie	Solid cathode $Li MNO_2$
Batteries compartment	On the sides of the electronics	Removable without acces to the electronics
Manual self-test	Activated by pushing the push button "TEST" on Remote Control Unit or sliding momentally the ELT switch to "ON" (less than 50s). Check of the output power (& related batteries voltage) during a modulated 406 transmission with inverted frame synchronization, antenna connection & C/S identification. 5s of 121.5 MHz is sent during self test.	Automatic return to OFF position on Remote Control Unit. Correct self test 10 s "ON" on the ELT LED Failed self test 10 s blinking on the ELT LED
Delay prior distress signal transmission	30 s after the self test report (about 50 s from manual activation, about 30s from automatic activation [G-Switch]	LED Display Rate 1.75s active, 0.25s inactive
Display on beacon	sound (buzzer) and visual (red LED)	Rate 0.5s active, 0.5s inactive

ORIGINAL EN ROUGE

121.5 MHZ TRANSMITTER (HOMING)

Emission type (per ITU): **3K20A3X.**
"A" double side band; "3" single channel, analog information, "X" other (audio sweep).

PARAMETERS	SELECTED VALUE	REMARKS
Carrier Frequency	121.5 MHz ± 6 KHz	In accordance with ED 62
Medium term slope	< 0.2 ppm/mn	In accordance with ED 62
Medium term standard deviation	< 0.05 ppm	In accordance with ED 62
PT Beacon output power (Antenna acces / 50 Ω). 20 or 23 dBm selectable	+ 4 dB + 20 dBm - 0 dB	Permanent transmission except during 406.028 MHz transmission burst.
Primary antenna	Chelton/Rayan antenna Model 2624-82	Could be supplied by ELTA under P/N 25988.
Modulation	Amplitude	In accordance with ED 62
Transmission	Permanent	Except during 406 MHz transmission burst.
Frequency modulation	Audio	In accordance with ED 62
Excursion	1000 Hz	In accordance with ED 62
repetition rate	3 Hz	In accordance with ED 62
Utilisation coefficient	> 50 Hz	In accordance with ED 62
Component	Symetrical	In accordance with ED 62
Power repartition	> 50 %	In accordance with ED 62
Warm-up time	5 mm	In accordance with ED 62
Minimum autonomy @-20°C	> 60 H	with 1 daily self-test and 5 years old batteries

ORIGINAL EN ROUGE

243 MHZ TRANSMITTER(HOMING)

Emission type (per ITU): **3K20A3X.**
"A" double side band; "3" single channel, analog information, "X" other (audio sweep).

PARAMETERS	SELECTED VALUE	REMARKS
Carrie Frequency	243 MHz ± 12 KHz	In accordance with ED 62
Medium term slope	< 0.2 ppm/mn	In accordance with ED 62
Medium term standard deviation	< 0.05 ppm	In accordance with ED 62
PT Beacon output power (Antenna acces / 50 Ω). 20 or 23 dBm selectable	+ 20 dBm + 4 dB - 0 dB	Permanent transmission except during 406.028 MHz transmission burst.
Primary antenna	Chelton/Rayan antenna Model 2624-82	Could be supplied by ELTA under P/N 25988
Modulation	Amplitude	In accordance with ED 62
Transmission	Permanent	Except during 406 MHz transmission burst.
Frequency modulation	Audio	In accordance with ED 62
Excursion	1000 Hz	In accordance with ED 62
repetition rate	3 Hz	In accordance with ED 62
Utilisation coefficient	> 50 Hz	In accordance with ED 62
Component	Symétrique	In accordance with ED 62
Power repartition	> 50 %	In accordance with ED 62
Warm-up time	5 mm	In accordance with ED 62
Minimum autonomy @-20°C	> 60 H	with 1 daily self-test and 5 years old batteries

ORIGINAL EN ROUGE

406.028 MHZ TRANSMITTER

COSPAS-SARSAT Type Approval Number : **131 dated 15th July 2002.**
Emission type (per ITU): **16K0G1D.**
"G" phase modulation; "1" single channel with digital inormation, "D" Data transmission

PARAMETERS	SELECTED VALUE	REMARKS
Primary antenna	Chelton/Rayan antenna Model 2624-82	Could be supplied by ELTA under P/N 25988
Back up antenna	PROCOM whip antenna FLX 70/s	Is supplied by ELTA under P/N 02N6407X (X can be 0,1,2 or 3)
Warm-up time	5 mn	15 mn required in ED 62
Minimum autonomy at -20°C	24 H	with 1 daily self-test and 5 years old batteries (24 hours required in ED62)
PT Beacon output power (Antenna acces / 50 Ω)	+ 37 dBm ± 2 dB	Burst transmission, in accordance with COSPAS-SARSAT latest requirements
Other parameters: • Frequency • CW preamble • Repetition rate • Burst transmission time • First burst delay • Bit rate • Modulation • Short term stability • Medium term stability • Residual freq. Variation • Country code • Protocol	 406.028 ± 1 KHz 160 mS ± 1% 50 s ± 2.5 Selectable 440 or 520 mS ± 1% 50 s ± 2.5 400 Hz ± 1% Biphase-L ± 1 rd [± 1 rd] Better than 210^{-9} Better than ± 10^{-9} Better than 310^{-9} Any, Selectable Any, Selectable	in accordance with COSPAS-SARSAT latest requirements (modified at each burst) (short or long) (In accordance with ICAO/IMO) (Aeronautical only)
C/S Type Approval N°	N° 131	Issued on July 15th 2002

ORIGINAL EN ROUGE

FOR SOFTWARE EQUIPMENT ONLY: N/A
Embeded software in a microcontroler (not modifiable)

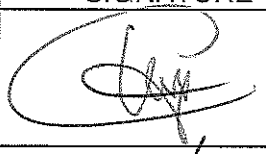
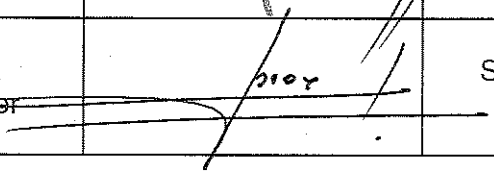
ACCOMPLISHMENT SUMMARY: N/A

SOFTWARE QUALITY ASSURANCE AND CONFIGURATION MANAGEMENT PLAN: N/A

CONFIGURATION INDEX DOCUMENT: 00E64650 (x)

I HEREBY, Claude CRESP, CERTIFY, THAT THE INFORMATION CONTAINED IN THIS DECLARATION OF DESIGN AND PERFORMANCE COMPLIES WITH THE REQUIREMENTS OF THE TECHNICAL SPECIFICATION AND IS MADE UNDER THE AUTHORITY OF CEIS TM WITHOUT WRITTEN AGREEMENT, I DECLINE ALL RESPONSIBILITY IN THE EVENT OF UNSATISFACTORY OPERATION OF THE EQUIPMENT BEYOND OPERATIONAL CONDITIONS AND LIMITATIONS INDICATED ABOVE.

DDP ACCEPTANCE STATUS:

	NAME	SIGNATURE	DATE
SUPPLIER	C. CRESP Product Support Manager		Sept. , 2002
SUPPLIER (QUALITY ASSURANCE)	B. DROXLER Quality ~~Manager~~		Sept. , 2002