

Field Programming Tablet (FPT)



User Manual Y1-03-0399 Rev. A

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This manual includes data for the 8800 Series Programming equipment:

8800 Series Programmer Configurations

P/N	Programming Capabilities
P/N 8805	Tablet and software only
P/N 8806	ELT 345, ELT 1000 and ME406
P/N 8807	ELT 345, ELT 1000, ME406, C406-N, C406-N HM, C406-1, C406-1 HM, C406-2, C406-2 HM, B406-4, and G406-4
P/N 8808	ELT 345, ELT 1000, ME406, ELT 3000, ELT 3000HM, ELT 4000, ELT 4000HM, C406- N, C406-N HM, C406-1, C406-1 HM, C406-2, C406-2 HM, B406-4, and G406-4
P/N 8809	ELT 4000S

8800 Series Cables



8800 Series FPT System



Figure 1 - Equipment Matrix

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AIRWORTHINESS LIMITATIONS

The Airworthiness limitations section is FAA approved and specifies inspections and other maintenance required under 14 CFR§ 43.16 and 91.403 unless an alternative program has been approved.

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FPT USER MANUAL ELT 345 ELT 1000, ME406, C406, B406, G406, ELT 4000/4000M, ELT 4000S

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LIST OF ACRONYMS, ABBREVIATIONS AND DEFINITIONS

ACTIVATION	Activation refers to an ELT that has been commanded to transmit, by Automatic trigger, manually or crash sensor, and may be transmitting on one or more frequencies.
ARINC	Aeronautical Radio, Incorporated, establishes standards for aviation communication and navigation, such as ARINC 429.
BAUD RATE	The speed at which data is received from the nav source providing position data to the beacon.
BNC	Bayonet Neill–Concelman (BNC), is a two-stud bayonet-style miniature quick connect/disconnect radio frequency connector used for coaxial cable.
CFR	Code of Federal Regulations – The general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government. Title 14, "Aeronautics and Space", contains the FARs.
COSPAS-SARSAT	The international search and rescue consortium that governs the international satellite-based search and rescue distress alert detection and information distribution system. For a complete description, go to the official web site for the International Cospas-Sarsat Program, <u>http://www.cospas-sarsat.int</u> . Also abbreviated as C/S.
DECODE	Convert ELT Hex ID to extract what information has been programmed into the beacon unique identifier or complete message.
DUMMY LOAD	Device used to simulate an electrical load for testing purposes, used to avoid inadvertent transmission of a distress message.
ELT	Emergency Locator Transmitter – ELTs are installed on aircraft and used to send emergency signals to the Search and Rescue (SAR) satellite system. The word "beacon" is associated with these devices.
EULA	End User License Agreement
EUROCAE	The European Organization for Civil Aviation Equipment (EUROCAE) is an international organization that deals exclusively with aviation standardization, for both airborne and ground systems and equipment.
FAA	Federal Aviation Administration – The United States government agency for aircraft safety and regulation.
FAR	Federal Aviation Regulations – The rules and regulations governing the manufacture, certification, operation, maintenance, repair and alteration of aircraft in the United States.
FPT	Field Programming Tablet

GNSS	Global Navigation Satellite System - a satellite system that is used to pinpoint the geographic location of a user's receiver anywhere in the world.
HEX ID	Hexadecimal code that provides unique identifier for Cospas-Sarsat beacons
ICAO	International Civil Aviation Organization https://www.icao.int
LED	Light Emitting Diode – Semiconductor device that emits light when current is passed through it. Usually used as a status or warning indicator.
LONG PROTOCOL	Long format of digital 406MHz message that allows for transmission of position data to be included, when an external navigation source is interfaced to the ELT.
MIL	The three-letter acronym that stands for "Military" and precedes military specifications and standards numbers (e.g., MIL-W-2828 would indicate a wire specification and MIL-STD-2828 would indicate a standard).
MSG	Abbreviation for Message.
PROGRAMMING	Operation to load pertinent data onto the beacon.
PROTOCOL	A message type defined to specify the type of data transmission for delivery and receipt, in particular to Cospas-Sarsat operations.
P/N	Part Number – Refers to an ACR part number, unless otherwise noted.
RTCA	RTCA Inc. – Organization that makes recommendations for airworthiness; refer to <u>https://www.rtca.org</u> for more information.
SAR	Search and Rescue.
SHORT PROTOCOL	Short format of digital 406MHz message, this type of protocol will not include position data.
TSO	Technical Standard Order – A TSO is a minimum performance standard issued by the FAA for specified materials, parts, and appliances used on civil aircraft.
UTC	Coordinated Universal Time – A time standard based on International Atomic Time. UTC is the time system used in aviation and is often associated with Greenwich Mean Time (GMT) and/or "Zulu" time.
TPS	Three-stud bayonet-style miniature quick connect/disconnect radio frequency connector used for coaxial cable. TPS connectors are found in dual-output ELTs such as B406-4, C406-2 and G406-4.

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RECORD OF REVISIONS

REVISION	CHANGE	DATE	REVISION	CHANGE	DATE
A	ECO 18287	11/12/24			

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SERVICE BULLETIN LIST

SERVICE BULLETIN NO	ISSUE DATE	SUBJECT	MANUAL REV NO	MANUAL REV DATE

FPT USER MANUAL ELT 345 ELT 1000, ME406, C406, B406, G406, ELT 4000/4000M, ELT 4000S

LIST OF EFFECTIVE PAGES

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1.0 INTRODUCTION

- 1. The FPT is a Maintenance Tool created by ACR Electronics to provide maintenance support to the following ELT beacons:
 - ELT 345
 - ELT 1000
 - C406
 - B406
 - G406
 - ME406
 - ELT 4000
 - ELT 4000M
 - ELT 4000S
- 2. The FPT allows the user to perform the following actions:
 - Read ELT Hex ID Data
 - Read Battery Data
 - Configure and program the 406 MHz Cospas-Sarsat Hex ID
 - Programming Adapter Reading and Programming, if applicable
 - Save Data Reports

Note: This programmer does not measure power or read the beacon transmission transmitted by the radio, and as such it does not require periodic calibration. Aftermarket 406MHz power test equipment must be used to provide an annual beacon power test when required. Please contact your local authority for ELT testing requirements during scheduled inspections.

2.0 EQUIPMENT NEEDED

Table 1 – FPT Hardware



Table 2 – FPT-ELT Interface Cables

ELT 345/1000/ME406 Cable (A3-06-3510-3)	C406 Series Cable ¹ (A3-06-3511-3)	C406-N Cable ² (A3-06-3525-3)
ELT 4000/4000M Cable ³ (A3-06-3512-3)	ELT 4000S Cable ⁴ (A3-06-3513-3)	

¹ For B406, C406-1, C406-2, and G406 programming, use cable P/N A3-06-3511-3

² For C406-N programming and C406-N Programming Adapter programming, use P/N A3-06-3525-3

³ For ELT 4000/4000M programming and ELT 4000/4000M Programming Adapter programming, use P/N A3-06-3512-3

⁴ For ELT 4000S programming, use P/N A3-06-3513-3

FPT USER MANUAL ELT 345 ELT 1000, ME406, C406, B406, G406, ELT 4000/4000M, ELT 4000S

Table 3 – ELT Hardware

ELT 345	ELT 1000	ME406 Series
B406, C406 (B406-4 shown)	C406-N	G406
ELT 4000	ELT 4000M	ELT 4000S

3.0 GETTING STARTED

- 1. Power on the FPT. *Enter credentials if required.*
- 2. Check the Battery Level on FPT Tablet in the bottom right corner.

Note: Consider Battery Levels and how much energy is required to perform maintenance using the tablet.

3. Select the FPT Launch Icon (Figure 2) on the FPT tablet home screen, and double tap to launch the application.



Figure 2 - FPT Launch Icon

4. Wait for the application to launch; the splash screen (Figure 3) will load during the application launch process.



Figure 3 - FPT Splash Screen

- 5. Connect the ELT to the FPT using the Interface Box and applicable cables. Be sure to secure all connections.
- 6. Upon the first launch of the FPT application, an End-User License Agreement (EULA) appears (Figure 4).

Note: The FPT User must accept this EULA to continue.

🚟 Fi	eld Prog	rammable Tablet						>				
*	Men	u Utilities	Setting	About	DEVICE: NO DEVICE	PORT STATUS: NOT CONNECTED	COM PORT: NO COM	JUN 05, 2024 03:42:59 PM				
	ACR Electronics End User Licence Agreement											
	End User License Agreement (EULA)											
	PLEASE READ THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT CAREFULLY BEFORE CONTINUING WITH THIS PROGRAM INSTALL											
	IMPORTANT - READ CAREFULLY. THIS END-USER LICENSE AGREEMENT ('EULA') IS A LEGAL AGREEMENT BETWEEN YOU (EITHER AN INDIVIDUAL OR ORGANIZATION) AND AC'S ELECTRONICS, INC. FOR SOFTWARE PRODUCT WHICH INCLUDES THIS COMPUTER SOFTWARE AND ITS ASSOCIATED PRINTED AND ONLINE DOCUMENTATION (HEREINAFTER 'SOFTWARE PRODUCT'). BY INSTALLING, DOWNLOADING, COPTING, ACCESSING, OR OTHERWISE USING ANY PORTION OF THE SOFTWARE PRODUCT, YOU AACCEPT THAT YOU SHALL BE BOUND BY THE TERMS OF THIS ELLA, INCLUDING THE WARRANTY DISCLAIMERS, LIMITATIONS OF LIABILITY AND REMEDIES, MAINTENANCE AGREEMENT, TERMINATION AND THIRD PARTY SOFTWARE LICENSING TERMS PROVISIONS BELOW. IF YOU DO NOT AGREE TO ACCEPT THE TERMS OF THIS AGREEMENT, DO NOT INSTALL OR USE THE SOFTWARE PRODUCT, AND EXIT NOW.											
	You further agree that the EULA is the complete and exclusive statement of agreement between ACR Electronics, Inc. and you and that this EULA supersedes any oral or written proposal, agreement or other communication relating to the subject matter of this EULA. You assume full responsibility for the use of the SOFTWARE PRODUCT and agree to use the SOFTWARE PRODUCT legally and responsibly. Florida laws shall govern this EULA. This EULA is deemed entered into at Broward County, Florida by all parties. If any provision of this EULA is declared unenforceable in any juridiction, then such provision shall be deemed to be severable from this EULA and shall not affect the remainder thereof.											
		SOFTWARE PRO	DUCT LICEN	NSE								
		I) GRANT OF LIC	ENSE									
		ACR Electronics, I	nc. reserves a	ll rights not expre	ssly granted below:							
) USAGE										
		Following your acc one copy of the SOI validly licensed cop	eptance of thi FTWARE PRO by of the Micro	s EULA, ACR Ele DDUCT on a sing osoft® Windows®	ctronics, Inc. grants you the right e computer or workstation ("COM operating system for which SOFT	to install and use PUTER") running a WARE PRODUCT was designed.						
					I Decline	I	Accept					

Figure 4 - FPT EULA

7. Once the EULA has been read, the I Accept button changes to green (Figure 5) and can be selected.

FPT USER MANUAL

ELT 345 ELT 1000, ME406, C406, B406, G406, ELT 4000/4000M, ELT 4000S

🔛 Fi	eld Progr	ammable Tablet						- • ×	(
ACR	Menu	J Utilities	Setting	About	DEVICE: NO DEVICE	PORT STATUS: NOT CONNECTED	COM PORT: NO COM	JUN 05, 2024 03:45:26 PM					
				ACR	ACR Electronics I	End User Licence A	greement						
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	0	ther licenses ("TI	HRD PARTY	ay include certain SOFTWARE"). N	i software code or other material s otwithstanding any of the foregoin	ubject to copyright and ig provisions of this		*					
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	а)											
	ь)											
	c)											
	đ)											
	1	11) NON-ASSIGNMENT											
	т	his EULA and th	e licenses gra	nted by it may no	t be assigned, sublicensed, or othe	rwise transferred by							
	I	Licensee without the prior written consent of ACR Electronics, Inc.											
	1	2) FEEDBACK											
	Y	ou have no oblig	ation to provid	e ACR Electronic	s, Inc. with ideas, suggestions, do	umentations,							
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	a	lready under con	sideration or i	n development; a ACR Electronics	nd (d) you are not entitled to any o Inc. for the Feedback under any	compensation or circumstances							
					,			*					
					I Decline		Accept						

Figure 5 - FPT EULA

8. Once the EULA has been accepted, the device connection screen is displayed.

4.0 CONNECTION WIZARD

WARNING: TO AVOID INADVERTENT ACTIVATION USE A 50-0HM DUMMY LOAD ON THE BNC/TPS ANTENNA CONNECTIONS DURING ANY READING OR REPROGRAMMING.

- 1. On initial startup the FPT displays the Device Connection Wizard screen (Figure 6).
- 2. The FPT Device Connection Wizard is a step-by-step setup tool for connecting to an ELT device.
- 3. The steps to connect an ELT are as follows:
 - Step 1: Select a COM Port from the drop-down menu to connect to.
 Note: This port should be the port for the FPT Interface Cable. If only one port is available, the FPT automatically chooses that port. If more than one port is available, select the dropdown box and select the correct port.
 - **Step 2:** Choose a device by selecting the image of the ELT that is connected.
 - Step 3: Once a COM Port and Device has been chosen, select the Connect button to establish a connection to the ELT.

Note: Under Step 1, the current selected COM Port and Device is displayed to show the current selections.



Figure 6 - FPT Device Connection Wizard

5.0 COMMUNICATION WITH ELT 345 and ELT 1000

- 1. When trying to communicate to an ELT 345 or ELT 1000, these devices require the user to toggle the front panel switch to the test position and to select a corresponding button on the FPT. The FPT prompts the user to perform these actions when necessary.
- 2. For initial connection to an ELT 345 or ELT1000, a pop-up prompt appears (Figure 7) after the **Connect** button has been selected on the FPT Device Connection Wizard screen.
- 3. This prompt provides the user with further instructions on how to connect to the device.
- 4. The user needs to toggle the ELT front panel switch from the ARM/OFF position to the TEST position and release, then select the **Read Device** button on the FPT immediately.
- 5. If done successfully, the home screen populates information about the device. If the device information does not populate, repeat Step 4.



Figure 7 - FPT ELT 345 Initial Connection Popup

6.0 COMMUNICATION WITH ALL OTHER ELT'S

- 1. For other ELT's (ME406, C,B,G 406 Series, ELT 4000 Series) the FPT communicates with these devices without the need for a toggle switch to be flipped to the test position.
- 2. For ELT 4000/4000M, and ELT 4000S, these devices will connect automatically once the connect button is clicked.
- 3. For **C,B,G 406 Series ELTs**, a popup window displays (Figure 8) instructions on how to connect to these different ELTs.
- 4. Please follow the instructions below:
 - 4.1. Make sure that a 50-Ohm load is always connected to the BNC and TPS ports when programming or reading a 406 series ELT.
 - 4.2. For the **C406 1/2**, **B406-4**, **G406-4** beacons, the front panel switch needs to be in the **ON Position** to read and program using the FPT.
 - 4.3. For the **C406-N** beacon, the front panel switch needs to be in the **OFF Position**.
 - 4.4. Select the correct 406 series ELT that is currently connected to the FPT.
 - 4.5. Select the Read Device button to connect to the ELT.

📰 Field Programming Tab	let						×
🄹 Menu Utili	ties	Setting	About	DEVICE: C406	PORT STATUS: CONNECTED	COM PORT: COM9	NOV 11, 2024 02:16:00 PM
ARTEX		Initial N Repeat	/lsg: - :ed Msa: -		Msg Pro Hex 15 (otocol: - Char: -	
Home		Hor	ne				
Read Data			Device	Initial Co	nnection for C	, B, G 406 Serie	es <mark>ormation</mark>
Redu Data		D	evice: No De	Please Follo	w the Instructior	is Below To Conne	ect
Programmer		P	ort Connecti	to	Your C406, B40	6 or G406:	/5001/5002/
		P	ort: COM9	C406-1/2, I	e		
Decoder		S	W Rev: -	C406-N: PI	switch in the ON I ease keep the togg	²osition. gle switch in the OFF	
		A	ssembled: -		position.		by 4.5 feet per
				NOTE: Plea conne	se keep a 50-OHM l ected when progran	oad for BNC and TPS nming/reading!	G-Switch or
				Pleas	e select a C, B, or	G 406 Series:	To: Operating:
				O C406 ● B406 ● G406		e: -55°C to +85°C	
				Read D	evice	Cancel	Coax Connection, Low Battery
🛞 V 1.14.13						Remote Control:	ON/ARM
Disconne	ct						

Figure 8 - FPT C,B,G-406 Init Connection Popup

7.0 HOME PAGE

- 1. The FPT home page provides information about the device that is currently connected.
- 2. Once connected, the home page displays the following (Figure 9):
 - Device
 - Port Connection
 - Com Port #
 - SW Rev (Only 406 and 4000 Series)
 - Assembled (Only 406 and 4000 Series)
 - Serial Number (Only 406 and 4000 Series)
 - TAC Number (Only 406 and 4000 Series)
 - Model
 - Product SKU
 - GPS
 - Activation
 - Temperature Certified to
 - Self-Test Checks
 - Remote Control
- 3. At the top of the screen the ELT Initial Message, ELT Repeated Message, the current message protocol and the current 15-character Hex ID is displayed. These messages are currently programmed into the connected beacon (also known as Cospas-Sarsat Hex IDs).
- **Note:** For ELT 4000 Series devices, the 15-character Hex ID will be calculated from the programming screen message.

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Figure 9 - FPT Home Page

- 4. To switch between screens, use the navigational menu on the left.
- 5. The FPT Software Version is listed at the bottom of the menu panel.

8.0 READ DATA

- 1. The Read Data page (Figure 10) allows the FPT user to read ELT and Battery data from their respective memory.
- 2. To read data, select one of the following buttons:
 - 2.1. Read ELT: Reads the data and Hex ID stored in the ELT memory.
 - 2.2. Read Battery: Reads the following battery data items:
 - ELT Model Type
 - Battery Serial Number
 - Elapsed Battery Usage Time
 - Battery Activation Count
 - 2.3. Get GPS Baud: Reads the currently set GPS Baud Rate (Available only on ELT 345, ELT1000).
 - 2.4. Set GPS Baud: Sets the GPS Baud Rate to either 4800 or 9600 (Available only on ELT 345, ELT1000).

Note: This is the navigation subsystem baud rate, 4800 bps for NMEA, 9600 bps for Aviation Protocol.

- 2.5. Read PA: Reads the programming adapter data (Available only on C406-N, ELT 4000/ELT 4000M).
- 2.6. Dump PA: Displays all memory blocks for the programming adaptor (Available only on C406-N).
- 2.7. **Read Self-Test:** Reads the current Self-Test results from an ELT 4000/4000M or ELT 4000S.
- 3. For ELT 345 and ELT 1000s there is a note above the buttons to remind the FPT user to toggle the front panel switch to the test position then select a button immediately after.

Note: For the Set GPS Baud please select the button first. A popup window appears. Then toggle the front panel switch to the test position and then select a baud rate.

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ELT 345 ELT 1000, ME406, C406, B406, G406, ELT 4000/4000M, ELT 4000S

🧱 Field Programming Tablet		– 🗆 X
🏟 Menu Utilities	Setting About DEVICE: ELT 345 PORT STATUS: CONNECTED COM PORT: COM9	NOV 11, 2024 02:17:43 PM
<u> ARTEX</u>	Initial Msg: D056E6F5555401004CF8C3D00000000 Msg Protocol: User Location - Serial (ELT 24-B Repeated Msg: D056E6F5555401004CF8C3D00000000 Hex 15 Char. ADCDEAAAA802009	iit Address)
Home	Read ELT Data	Saved Reports
Read Data	Please toggle the Front Panel Switch to the Test Position then click a button right after!	
Programmer	Read ELT Read Battery	
Decoder	Get GPS Baud	
🏵 V1.14.13		
Disconnect		



Field Programming Tablet		- 🗆 X
🏟 Menu Utilities	Setting About DEVICE: ELT 345 PORT STATUS:	S: CONNECTED COM PORT: COM9 NOV 11, 2024 02:19:58 PM
ARTEX	Initial Msg: D056E6F5555401004CF8C3D00000000 Repeated Msg: D056E6F5555401004CF8C3D000000000	Msg Protocol: User Location - Serial (ELT 24-Bit Address) Hex 15 Char: ADCDEAAAA802009
Home	Read ELT Data	Saved Reports
Read Data	Please toggle the Front Panel Switch to the Test Position then click a button right after!	Finished Reading ELT Data!
Redu Data		ELT Data 11-11-2024 19:19:51 UTC
Programmer	Read ELT Read Battery	ELT Timing Data: 000000508000460046B3000000000000
Decoder	Get GPS Baud	ELT Initial Message Data: D056E6F5555401004CF8C3D00000000 ELT Repeated Message Data: D056E6F5555401004CF8C3D000000000 Hex ID 15 Characters: ADCDEAAAA802009 GPS Baud Rate is set to 9600
🛞 V 1.14.13		
Disconnect		

Figure 11 - FPT Read Data Screen

Note: If there isn't any data displayed after selecting a button, wait a few seconds then select the same button again. If there still isn't any data displayed, try restarting the FPT software.

4. After a reading has successfully completed, a report automatically saves to the FPT tablet.

8.1 READ ELT DATA (C406-N)

- 1. The C406-N has two additional buttons for Reading and Dumping (Figure 12) the data from the Programming Adapter (PA).
- 2. Once a button is selected, data starts being received. The data is displayed on the right side of the screen in the text box.
- 3. Text appears above this text box displaying what data is currently being read. This text changes once the reading is complete.



Figure 12 - FPT Read ELT Data Screen (C406-N)

8.2 READ ELT DATA (ELT 4000 SERIES)

- 1. The ELT 4000 and ELT 4000M devices have two additional buttons for reading the data from the Programming Adapter (PA) and reading the Self-Test results data (Figure 13).
- 2. The ELT 4000S will only display the Read ELT, Read Battery and Read Self-Test buttons.
- 3. The **Read Self-Test** button will retrieve the results from the connected ELT 4000 series device and displays PASS/FAIL results.

📰 Field Programming Tablet	· · · · · ·			- 🗆 X
Menu Utilities	Setting About DEVICE: ELT 4000N	PORT STATUS: CONNECTED	COM PORT: COM9	NOV 11, 2024 02:22:25 PM
<u> ARTEX</u>	ACR Msg: FFFE2F96E45FC0647FDFFDBC8 POS Msg: FFFED056E2EB28I40AAE085294	8F583E0FAA8 Msg Prot 9000000000 Hex 15 Cl	tocol: User Location - ELT (Av har: ADC5D65028155C1	riation User)
Home	Read ELT Data		4000 Op	tions Saved Reports
Read Data		_	Finished Reading S	elf Test Results!
			Self-Test Results	11-11-2024 19:22:21 UTC
Programmer	Read ELT Read	Battery	N: 100 TAC: 383 Ite of Mfr: 5/5/23	Ê
Decoder		FFF	E2F96E45FC0647FDFFDBC8	BF583E0FAA8
	Read PA Read	Self-Test Ele	ctronic Witness:	PASS
		NV	'M Checksum:	PASS
		400	6 MHz PLL Lock:	PASS
		400	6 MHz Tx:	FAIL
		121.	.5 MHz Tx:	FAIL
		Bat	ttery Monitor:	PASS
		PA	Not Programmed:	PASS
		PA	Presence:	PASS
		Na	v Data Present:	PASS
		G-S	Switch Enabled:	PASS
		MIS	ssing UIN:	PASS
		GP	5 Header:	PASS
👾 V 1.14.13			tenna Load	FAU
		An	tten/Serial:	PASS
Disconnect				

Figure 13 - FPT Read ELT Data Screen (ELT 4000 Series)

- 4. An additional page (4000 Options) is available for the ELT 4000 series device. The ELT 4000 Options tab can be selected at the top right of the screen (Figure 13) to display a new page.
- 5. The ELT 4000 Options page (Figure 14) displays the currently programmed ELT 4000 configuration options.
- 6. This page will display a check mark or filled in circle for the options that are currently programmed into the ELT.
- 7. Only the Enable Programming Adapter and Nav Source options are available to reconfigure.
- 8. Select the **Read** button to read the currently programmed options.
- 9. Select the **Program** button to reprogram the ELT 4000 with the selected options.



Figure 14 - FPT Read Data Screen (ELT 4000 Series)

8.3 SAVING AND VIEWING ELT REPORTS

- 1. The **Read Data** page (Figure 15) allows the user to save ELT reports locally on the FPT Tablet in a PDF file format.
- 2. To save an ELT report, first select one of the available buttons and wait for the data to finish reading.
- 3. Once the reading has finished, the retrieved data that is currently displayed on the FPT is automatically saved to the FPT tablet. A message appears to show that the report has been saved.

Note: The Get GPS Baud and Set GPS Baud buttons do not save a report.



Figure 15 - FPT Read Data Screen

4. To view all currently saved ELT reports, select the **Saved Reports** button located at the top right of the Read ELT Data page. This displays a new page (Figure 16).

Note: Reports are ordered by the dates of each report with the most recent report always at the top of the list.

- 5. The **Saved ELT Reports** tab shows the following information:
 - **Report Number**: The list order of reports ordered from most recent to oldest.
 - **Report Type**: The type of data that the report has.
 - **Report Date**: The date that the report was saved on.
 - **Reports**: Used to open a saved report.
 - Select Report Type: Used to switch which type of reports to view. (ELT Data or Battery Data Reports, PA Reports and Self-Test Reports if applicable).

Field Programming	1 Tablet					-	– 🗆 X
🎎 Menu U	Jtilities	Setting	About	DEVICE: ELT 345	PORT STATUS: CONNECTED	COM PORT: COM9	NOV 11, 2024 02:25:02 PM
<u> ARTE</u>	X	ACR Ms	g: D056E6F5	555401004CF8C3D000000	000 Msg Prote	DCOI: User Location - Serial (ELT	24-Bit Address)
		P OS Mis	g. D030L013.			CI. ADCDLAAAA002003	
Home		Save	ed ELT R	eports			Read Data
						Select Report Type	ELT Data Reports
Read Data	1						
			Report #	Report Typ	be	Report Date	Reports
Programm	er		1	ELT Data	11	-11-2024 19:24:30 UTC	Report 1
Decoder							
Decoder			2	ELT Data	11	-11-2024 19:24:23 UTC	Report 2
			3	ELT Data	וו	I-11-2024 19:24:17 UTC	Report 3
			4	ELT Data	11	-11-2024 19:24:10 UTC	Report 4
			5	ELT Data	T	1-11-2024 19:19:51 UTC	Report 5
	13		6	ELT Data	n	-11-2024 16:02:53 UTC	Report 6
Disconn	nect		7	ELT Data	11-	06-2024 20:10:35 UTC	Report 7

Figure 16 - FPT Read Data Screen

6. To **view** a Saved Report, select the corresponding **Report # (Highlighted in blue)** under the **Reports** column. This opens the PDF report for that item.

9.0 PROGRAMMER

WARNING: ENSURE ANY REPROGRAMMED ELT HEX IDS ARE REGISTERED WITH THE APPROPRIATE 406 MHZ ELT REGISTRATION DATABASE.

- 1. The **Programmer Page** (Figure 17) offers a useful tool for Cospas-Sarsat Hex ID programming.
- 2. The Cospas-Sarsat Beacon Programming tool allows the FPT user to configure their own unique Cospas-Sarsat Hex ID to be used on their ELT.
- 3. This tool programs the ELT memory with the configured Cospas-Sarsat Hex ID when the **Set Hex ID** button is selected.
- 4. The following is available on the Cospas-Sarsat Beacon Coding tool:
 - a. **Protocol Type:** Sets the programming protocol type.
 - i. User
 - ii. Standard
 - iii. National
 - b. Beacon Type: Sets the beacon type, must be set to ELT.
 - c. **Protocol Code**: Sets the ELT Protocol Code.
 - i. Serial User Aircraft 24-Bit Addr (Short)
 - ii. Serial User Aircraft Operator (Short)
 - iii. Serial User ELT Serial (Short)
 - iv. Aviation User Tail Number (Short/Long)
 - v. Standard Aircraft 24-Bit Addr (Long)
 - vi. Standard ELT Serial (Long)
 - vii. National ELT Serial (Long)
 - d. Format Flag: Set the Format Flag. (Short or Long)
 - e. Country Code: Set the country code from a list of countries
 - f. Frame Sync: Displays that the frame sync pattern during Normal use. (Non-Configurable)
 - g. Homer: Displays that the homer state is Enabled (Non-Configurable)
 - h. GPS: Displays that the GPS state is External (Non-Configurable)

- 5. The FPT user can select a Protocol, then corresponding textboxes will enable to allow text to be entered for protocol configuration.
- 6. The box at the bottom of the screen containing a Hex ID automatically updates based on the information that is entered.

Field Programmi	ng Tablet						- 🗆 X
🏩 Menu	Utilities	Setting About	DEVICE: EL	r 345 Port	STATUS: CONNECTED	COM PORT: COM9	NOV 11, 2024 02:25:55 PM
<u> ART</u>	<u>E</u> X	ACR Msg: D056 POS Msg: D056	6F55555401004CF8 6F55555401004CF8	C3D0000000000 C3D0000000000	Msg Pro Hex 15 (otocol: User Location - Char: ADCDEAAAA802	Serial (ELT 24-Bit Address) 009
Home		Cospas Sa	arsat Beacon	Programm	ing		C/S Reports
Pead Date	~	Locatio	n Protocol:	Beacon Ty	pe P	rotocol Code	Country Code
Kedu Dut	u	U	ser ·	ELT	~ Se	rial - A/C 24-Bit 🛛 🗸	USA (366)
Program	ner			Form	at Flag:	Short -	Frame Sync
		AA		C 24 bit Addr	(Hex) O He	ex 🔵 Oct	Normal v
Decoder				Homer			
			Air	craft Operato	or		Enabled v
			2 Sp	ecific ELT #			GPS Source
			2 Ta	c Number 🛛 🔘) Cospat-Sa	rsat	External
		36 Char	FFFE2F56E	6F555540100	4CF8C3D00	0000000	
		32 Char	2F56E6F5	555401004CF	8C3D00000	0000	
				400000			
🔅 V1.1	4.13	15 Char:	ADCDEAAA	A802009			
Discon	nect	Please toggle Test Position t	he Front Panel Switch nen click the Set Hex bi	to the Set He	ex ID	Save Report	

Figure 17 – Cospas-Sarsat Programmer

- 7. When finished with configuration, select the **Set Hex ID** button at the bottom of the screen. This programs the ELT with the created Cospas-Sarsat Hex ID. **A popup then appears.**
- 8. This **popup** informs the FPT user of the status of the programming and validation sequence.

Note: If a verified Hex ID data is not displayed then there possibly was an error with the programming. Please check your interface box cable connections to the ELT. If the problem persists, try restarting the FPT software and try again (the verified Hex ID data is what is read back after programming a Hex ID).

 Do not close the popup window (Figure 18) until the "ELT Programming Complete!" or "ELT Programming Failed!" is displayed.

FPT USER MANUAL

ELT 345 ELT 1000, ME406, C406, B406, G406, ELT 4000/4000M, ELT 4000S

Field Programming Tablet	- C	×
	Setting About DEVICE: ELT 345 PORT STATUS: CONNECTED COM PORT: COM9 NOV 11, 2024 02:2 ACR Msa: 2F56E6F5555401004CF8C3D00000000 Msa Protocol: User Location - Serial (ELT 24-Bit Address)	6:20 PM
	POS Msg: 2F56E6F5555401004CF8C3D00000000 Hex 15 Char: ADCDEAAAA802009	
Home	Cospas Sarsat Beacon Programming C/S Reports	5
Read Data	Location Protocol: Beacon Type Protocol Code Country Code	
Programmer	ELT Programming Complete! Frame Sync	
Decoder	AAAAAO ELT Timing Data Normal Image: 000000508000460046B300000000000000000000000000000	
₩ ¥1.14.13	15 Char: ADCDI	
Disconnect	Please toggle the Front Panel Switch to the Set Hex ID Save Report	

Figure 18 – Cospas-Sarsat Programmer

- 10. Select the **Close** button to close the popup window.
- The Cospas-Sarsat Beacon Programming tool can save a Protocol Report that provides information about the currently programmed Cospas-Sarsat Hex ID on the ELT. This can be done by pressing the Save Report button.
- 12. To **view** all currently Saved Protocol Reports, select the **C/S Reports** tab button located at the top right of the Cospas-Sarsat Beacon Programming Page. This displays a new page.

9.1 PA PROGRAMMING (C406-N, ELT 4000/4000M)

When using a **C406-N or ELT 4000/4000M** on the programmer page, two options appear above the **Set Hex ID** button (Figure 19).

- 1. Select the **Write ELT** to program the C406-N or ELT 4000/4000M memory directly.
- 2. Select the Write PA to program the PA connected to the C406-N or ELT 4000/4000M.
- 3. Once an option is selected, select the **Set Hex ID button** to program the ELT or PA with the current configured Cospas-Sarsat Hex ID.



Figure 19 – C406-N and ELT 4000/4000M Cospas-Sarsat Beacon Programming Page

10.0 DECODER

The Cospas-Sarsat Decoder (Figure 20) provides a tool to decode a Cospas-Sarsat Hex ID.

- 1. The **FPT Decoder** currently supports decoding Hex IDs of length 36, 32 or 15 and decodes all location protocols for ELT beacons (User, Standard or National).
- 2. The FPT Decoder allows the FPT user to either enter their own Cospas-Sarsat Hex ID or to get the current programmed Cospas-Sarsat Hex ID that is on the ELT.
- 3. This beacon decoder is created for first generation beacons of 36, 32 or 15 hex characters and is defined by Cospas-Sarsat T.001 Issue 4 Rev 6.
- 4. The following is available on the Decoder Page:
 - Enter a Cospas-Sarsat Hex ID.
 - Get C/S Msg to get the current programmed Cospas-Sarsat Hex ID on the ELT.
 - Decode Msg to decode the entered Cospas-Sarsat Hex ID.





- 5. When the **Decode Msg** button is selected, the entered 36, 32 or 15 character Cospas-Sarsat ID is decoded.
- 6. If the ID was a 36 or 32 character, then a 15 character Hex is decoded and displayed.
- 7. The output of the decoder (Figure 21) is in the form of a table with the following columns:
 - **Binary Range**: The interval range that the binary bits are within.
 - **Binary Content**: The binary bit values that are within the set Binary Range.
 - Field Name: The identifier that corresponds to the Binary Range.
 - **Decoded Value**: The Field Name information values that are the result of the Binary Content.

Field Programm	ing Tablet						– 🗆 X	
Menu Menu	Utilities	Setting	About	DEVICE: ELT 345	PORT STATUS: CONNECTED	COM PORT: COM9	NOV 11, 2024 02:26:58 PM	
POS Msg: 2F56E6F5555401004CF8C3D00000000			Hex 15 Char: ADCDEAAAA802009					
Home		Cospas Sarsat Decoder			Pleas ther	Please toggle the Front Panel Switch to the Test Pos then click the Get Current C/S Msg button right af		
Read Dat	a		Enter a (36,	Cospas Sarsat ID 32 or 15 Char):	Decoded Hex ID 15 Char:	Get Current C/S Msg:	Get C/S Msg	
			2F56E6F5555	5401004CF8C3D000000000	ADCDEAAAA802009	Decode C/S Msg:	Decode Msg	
Program	mer							
			Binary Range	Binary Content	Field Name	Decoded Valu	e	
Decoder							8	
			16-24	000101111	Frame Synchronization Pat	ttern Normal Beacon Ope	pration	
			25	0	Format Flag	Short Message	•	
					·g			
			26		Protocol Flag	User protocols or user- protocols	location	
			27-36	0101101110	Country Code	United States - 3	66	
🍀 V1.1	14.13		37-39	011	Protocol Code	Serial User		
Discon	nect						-	
		Deco	oder Version: 2	.2.0		* Beacon Decoder defined	by T.001 Issue 4 - Rev.6.	

Figure 21 - FPT Decoder Screen

11.0 FPT DISCONNECTION

- 1. After an FPT user is finished with their ELT maintenance using the FPT, select the **Disconnect** button at the bottom left of the screen.
- 2. This disconnects the FPT from the current COM port and the Device Connection Wizard appears (Figure 22).



Figure 22 - FPT Disconnected

12.0 VIEWING THE MANUAL IN APP

- 1. The FPT offers an in-app manual to help with operating the FPT application.
- 2. To view the FPT manual in the app, select the **Utilities** menu item at the top of the screen (Figure 23).



Figure 23 - FPT Manual Viewer

3. Select **FPT Manual** to open the manual. A new window appears with the latest manual (Figure 24).



Figure 24 - FPT Manual Viewer

13.0 UPDATING THE FPT APP

The FPT offers an automatic over-the-air software update feature. This feature automatically notifies the FPT user of a software update (if available) on initial startup of the application.

Internet access is required to check for FPT software updates.

13.1 HOW TO UPDATE

- 1. On initial startup of the application, the FPT verifies that an internet connection is present.
- 2. Once connected to the internet, the FPT checks for a software update.
- 3. If an update is found, a popup displays (Figure 25) prompting the user if they want to continue with the update.



Figure 25 - FPT Updater

- 4. The FPT user can either select **Yes** or **No**.
 - 4.1. Selecting Yes continues with the update

Note: This closes the FPT application to ensure a proper installation.

- 4.2. Selecting **No** does not install the update and the FPT user can continue using the application.
- 5. Once the Yes button is selected, the FPT begins trying to download the update.
- 6. If successful, the FPT closes and an installer window appears (Figure 26).
- 7. Proceed through the installer window prompts to properly install the new FPT software update.

记 FPT		_	
Welcome to the FPT Set	tup Wizard		
The installer will guide you through the st	eps required to instal	IFPT on your compu	ter.
WARNING: This computer program is pro Unauthorized duplication or distribution o or criminal penalties, and will be prosecut	otected by copyright f this program, or any ed to the maximum e	law and international portion of it, may res extent possible under	treaties. ult in severe civil the law.
	< Back	Next >	Cancel

Figure 26 - FPT Installer

8. Please read through the End User License Agreement (Figure 27) then select I Agree then select Next.

🛃 FPT		_		×
License Agreement			[
Please take a moment to read the licer Agree", then "Next". Otherwise click "	nse agreement now. If Cancel''.	you accept the terms	below, clicl	k ''I
End User License Ag	reement (EU	LA)		^
PLEASE READ THE 7 LICENSE AGREEMENT WITH TH	FERMS AND C CAREFULLY IIS PROGRAM	ONDITIONS O BEFORE CON INSTALL	F THIS TINUIN	īG
O I Do Not Agree	I Agree			*
	< Back	Next >	Cano	el

Figure 27 - FPT Installer

- Verify that the install location is the following path: C:\Program Files (x86)\ACR Electronics, Inc\FPT\ (Figure 28).
- 10. Select Next.



Figure 28 - FPT Installer

11. Confirm that you want to install the new FPT software (Figure 29). Select Next.

t∰ FPT	_		×
Confirm Installation			
The installer is ready to install FPT on your computer.			
Click "Next" to start the installation.			
< Back Next >		Ca	ncel

Figure 29 - FPT Installer

12. Wait for the installation to finish (Figure 30) then select **Close**.



Figure 30 - FPT Installer

13. After the installation is complete, please open the FPT app again and verify that the version number at the bottom left of the screen has changed to a newer version.

13.2 MANUALLY CHECK FOR UPDATES

- 1. On top of automatically checking for updates, the FPT user may manually check for updates while using the FPT.
- 2. Select the **Utilities** menu item at the top of the screen then select **Check for Updates** (Figure 31). This manually checks the server for an update.
- 3. If an update is found, please proceed through the same installation process as in **Section 13.1**.



Figure 31 - FPT Manual Update Check

13.3 TURN ON/OFF AUTO UPDATES

- 1. If the FPT user would prefer not to have automatic updates there is an option to turn them off.
- 2. It is advised to keep the automatic updates turned on so the FPT can stay up to date with the latest FPT features.

Note: If the automatic updates are turned off, the FPT user must manually check for updates.

- 3. To turn off automatic updates, select the **Utilities** menu item at the top of the screen (Figure 32) then select **Update Checker -> OFF**.
- 4. To turn back on automatic updates, select the **Utilities** menu item at the top of the screen then select **Update Checker -> ON.**



Figure 32 - FPT Update Preference