



CRASH POSITION INDICATOR WITH MEMORY MODULE

 503-16MM SERIES

 **Techtest**  
PART OF THE HR SMITH GROUP

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## CPI Beacon with Memory Module

- 121.5MHz, (243MHz\*) & 406MHz
- GPS co-ordinates transmitted via 406MHz
- Class 1 ADELT
- FDR and CVR memory module
- Crash Proof



## System Interface Unit

- System 'Arm' and 'Off' guarded switch
- Multi-Axis programmable G-Switch
- Back-up battery



## Beacon Release Unit

- Compressed spring for deployment
- CPI beacon attachment point



## Recorder Interface Unit

- Data Inputs options: ARINC 429, ARINC 717 or ARINC 664. Plus discrete Inputs
- RIPS (Recorder Independent Power Supply)\*



## Water Switch

- Activates when submerged in water
- Deploys the beacon via the SIU



## Cockpit Control Panel

- System test
- Beacon transmit guarded switch
- Beacon deploy guarded switch
- 'Test' and 'Beacon Deployed' LEDs
- Night Vision Imaging System (NVIS) Compatible lighting

*Find your crew and recover your flight data*



## Key Features:

- CPI beacon automatically deploys from aircraft
- Transmits the 406 MHz distress message and GPS coordinates
- Stores a back-up of the FDR/CVR data
- Certified Automatically Deployable Emergency Locator Transmitter (ADELT)

## The Challenges

The ditching of an aircraft in the water creates two time sensitive scenarios. Firstly, and most importantly, the crew and passengers must be located and rescued. Secondly, the flight data must be recovered to determine the cause of the incident. The Crash Position Indicator with Memory Module (CPI-MM) addresses both scenarios.

On impact the beacon automatically activates and deploys from the aircraft. Floating on the water, it transmits the Cospas-Sarsat 406 MHz distress message, including latitude / longitude coordinates, for the SAR authorities to coordinate a rescue effort.

Prior to deployment the state-of-the-art Recorder Interface Unit (RIU) takes a continuous feed of Flight Data (FDR) / Cockpit Voice Recorder (CVR) and transfers directly to the Memory Module housed within the CPI beacon. In the event of a crash, the rescue teams can locate the buoyant CPI beacon and recover the flight/voice data, even if the aircraft has sunk. This allows air crash investigators quicker access to the evidence they require to establish a cause and prevent future accidents.

## Flight Data Securely Stored

The Memory Module is housed within the ADELT and is capable of storing up to 25 hours of flight data, held within a buoyant, hermetically sealed, flame proof case. This means that an exact copy of all information held by the FDR/CVR is securely contained within the memory module. This Class 1 ADELT also supports live GPS tracking post-deployment, to assist in rapid recovery, allowing crash investigators faster access to the information they require.

## Transmitter Signal

Frequency:	121.5MHz/243MHz*/406MHz
Peak Effective:	75mW at 121.5MHz
Radiated Power:	5.0W at 406MHz
Frequency Stability:	2 x 10 <sup>-9</sup> per min
Transmission Duration:	24Hrs min, 5W EIRP at -40°C 48Hrs min, 75mW EIRP at -40°C

## Memory Module

Audio storage:	min 2 hours
Data storage:	min 25 hours

\*RIPS (Recorder Independent Power Supply) to ensure that data continues to be recorded for up to 2 hrs post aircraft power loss, providing a vital further insight into the development of an incident.

## Activation & Deployment

Offering Five methods of deployment:

- 1 **Manual** - Pilot activation via a cockpit control panel.
- 2 **G Switch** - The SIU detects considerable changes in pre-programmed parameters and deploys the CPI beacon.
- 3 **Water switch** - In the case of water ingress, the switch detects this and will deploy the CPI beacon.
- 4 **Frangible (Crush) Switch** - Impact of an external switch on the aircraft, will deploy the CPI beacon.
- 5 **Hold Off Loop** - In the event of the tail boom breaking off from the aircraft, the BDC will detect a break in the circuit loop and automatically deploy the CPI beacon.

## Dimensions, Weight and Battery Storage Life

### CPI Beacon

Part No. 503-16MM

305mm x 92mm (12 ins x 3.62 ins)

Battery Storage Life 5 years

### CPI Cockpit Control Panel

Part No. 503-22 Series

146.2mm x 38mm x 66mm (5.75ins x 1.5ins x 2.6ins)

### CPI Beacon Release Unit

Part No. 503-21-MM

140mm x 70mm x 67mm (5.5ins x 2.76ins x 2.64ins)

### Recorder Interface Unit

Part No. 503-57-A

187mm x 165mm x 68.9mm (7.4ins x 6.5ins x 2.7ins)

Part No. 503-57-B

187mm x 165mm x 100mm (7.4ins x 6.5ins x 3.9ins)

Battery Storage life is 10 years

### CPI System Interface Unit

Part No. 503-24 Series/ 503-42 Series

217mm x 120mm x 82mm (8.5ins x 4.7ins x 3.2ins)

Battery Storage Life 5 years (A01011)

### CPI Water Activated Switch

Part No. 503-23-2

140mm x 59mm x 31mm (5.5ins x 2.6ins x 1.2ins)

### CPI Beacon Deployment Control

Part No. 503-41

140mm x 55mm x 89mm (5.5ins x 2.17ins x 3.5ins)

### CPI Aircraft Ident Config. Unit

Part No. 503-40

150mm x 66mm x 40mm (5.9ins x 2.6ins x 1.57ins)

## Compliance & Approvals

Cospas/Sarsat specification C/ST.001 C/ST.007

EUROCAE ED-62/RTCA DO-204/RTCA DO-183

EUROCAE ED-14/RTCA DO-160F

CAA Specification No16, Issue 2

EUROCAE ED-112A (Software, Audio and RIPS)  
applicable sections and levels

TSO C91a, JTSO-2C91a, TSO C126 and JTSO-2C126

CAA WR01029

Cospas/Sarsat Approval TAC No. 244

TCCA



+44(0) 1568 708 744 | sales@hr-smith.com | hr-smith.com

Images with aircraft featuring the CPI without Memory Module. No part of this brochure may be reprinted or duplicated without our consent. All sizes and measurements are approximate but we try to make sure that they are as accurate as possible. In the interest of continuous production development HR Smith reserves the right to alter specification as necessary.

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