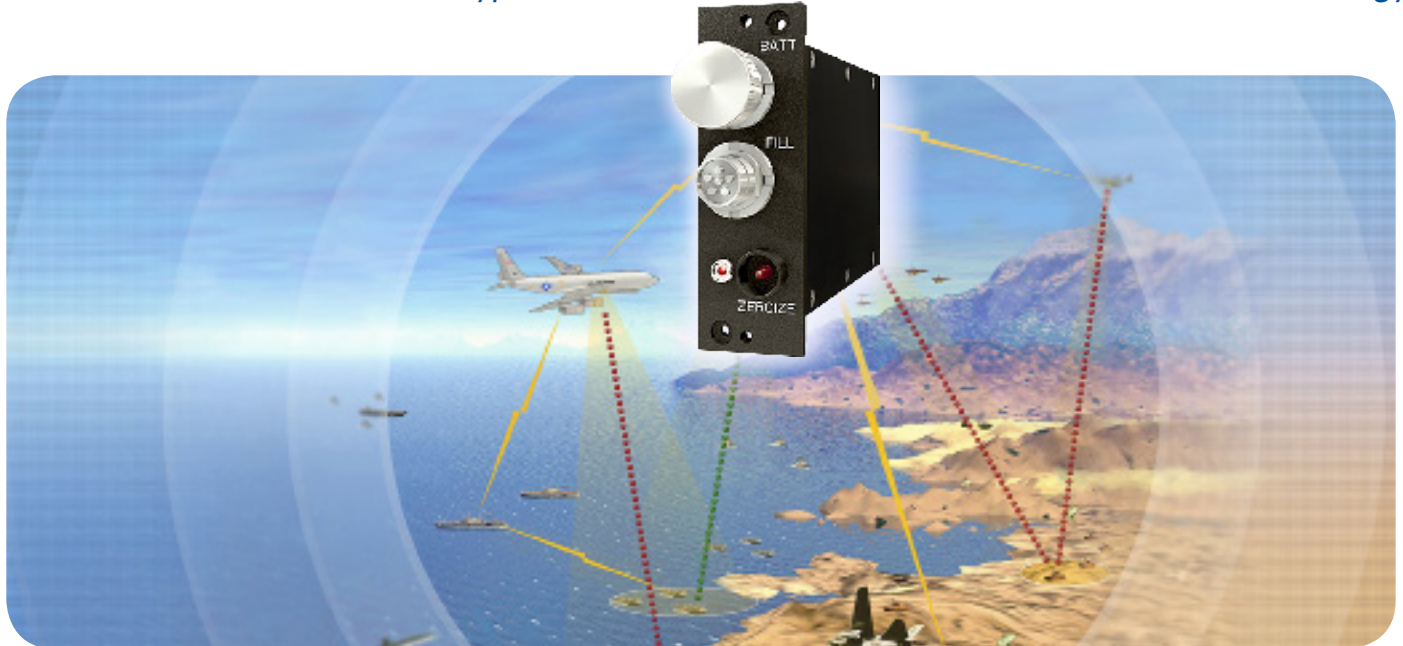


# Reduced Form Factor IFF Cryptographic Appliqué

*Identification Friend or Foe Crypto Solutions Based on Proven Certified NSA Technology*



Small appliqué  
form-factor supports easy

removal, storage, and  
battery maintenance

Mark XIIA  
(Mode 4 and Mode 5)

AIMS 04-900 compliant

Simultaneous Mode 4/5  
interrogate and transpond

Software upgradable and  
designed for embedment

As a leading supplier of cryptography for avionics, General Dynamics Mission Systems has over 40 years of Type 1 system development experience. Our systems include some of the most advanced hardware, software and mechanical designs, in lightweight, low-power, ruggedized form factors.

Our Reduced Form Factor Identify Friend or Foe (IFF) technology provides a platform to build an Appliqué for cryptographic services for a Combined Interrogator/ Transponder (CIT) or individual interrogator or transponder Mark XIIA (Mode 4 and Mode 5) IFF system.

General Dynamics IFF Crypto technology supports Mode 4 / Mode 5 concurrently, and interrogator/ transponder operations. It manages three months of black keys stored encrypted, to allow key recovery. It loads under battery power (Cold Load) and prime (Warm Load) via DS-101, compatibly with CYZ-10 and SKL key fill devices. The interface is specified in Department of Defense AIM 04-900 document.

# IFF Technology for Embedment

## General Specifications

- AIMS 03-1000
- AIMS 04-900 Option A
- STANAG 4193
- EKMS 308/608
- MIL-STD-810F
- MIL-STD-461E
- DO-160D

## Modes of Operation

- Storage Mode — minimum of eight years
- Key Retention (Code Hold/Cold Load) Mode
  - minimum of six months
- Prime Power Mode — IR and XP simultaneously

## IFF Crypto Support Tools

Emulator: Performs Mode 4 and Mode 5 interrogate and transpond functions that are compliant to AIMS 04-900 Option A with respect to interface voltages, waveforms, timing and power consumption. However, this emulation does not use actual cryptography, and therefore is not a CCI device.

STE: Performs closed box confidence testing on Appliqué and emulator to verify unit is functional. The STE can collect crypto status, verify application keys, check for low battery, and can confirm which image versions are loaded.

## Why General Dynamics?

At General Dynamics Mission Systems, we build IFF crypto solutions for every branch of the military. Our IFF crypto solutions provide legacy interoperability and the programmability to adapt to new cryptographic protocols without hardware modification. With over 15 years building IFF systems.

## Features

Small appliqué design:

Removal leaves host equipment unclassified

Modes (all simultaneous)

Mode 4 . . . . . Encrypt/Decrypt

Mode 5 . . . . . Encrypt/Decrypt

Size . . . . . 3 in. x 4.5 in. x 1.1 in. (approximate)

Weight . . . . . 19 oz. (approximate)

Interfaces

Mode 4 . . . . . Legacy video IAW AIMS 97-900

Mode 5 . . . . . Serial IAW AIMS 04-900 (LVDS standard)

Keying . . . . . EKMS 308/608, DS-101, cold load

## Applications

- Unmanned Aerial Vehicles (UAV)
- Handheld
- Surface to Air Anti-Aircraft

Characteristics	Specifications
<b>ENVIRONMENTAL REQUIREMENTS</b>	
<i>Operating Environment</i>	
Temperature	-40°C to +91°C (-40°F to +196°F)
Altitude	78,000 feet (23774.4 meters)
Relative Humidity	0% to 100%
Shock	≥40 g's 8 ms each axis
Acceleration	≥ 16 g's
<i>Storage Environment</i>	
Temperature	-54°C to +95°C (-65°F to +203°F)
Relative Humidity	100% (meets the requirements of MIL-E-5400, paragraphs 3.2.17 and 3.2.24.4.)
<b>POWER</b>	
Primary Power	Input +15 Vdc ±1.0 Vdc
Max. Continuous Current	< 200 mA
Battery Power	+7.8 Vdc
Normal Code Hold Current	<300 µA
Battery Life	> 6 months, < 20 µA standby

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