

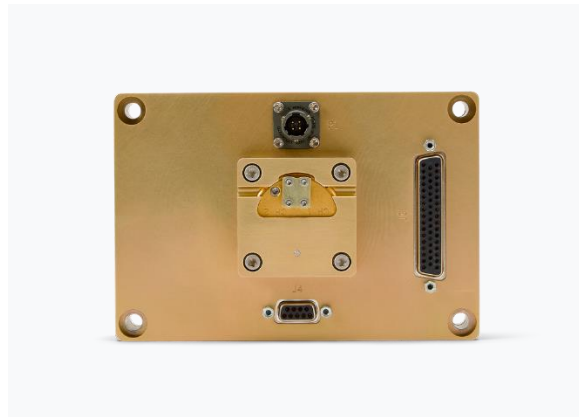
# NavFire Carrier (NFC)

GPSR Interface &amp; 1PPS Fan-Out

## [ PRODUCT OVERVIEW ]

## NavFire Carrier (NFC)

Invocon's NavFire Carrier (NFC) hosts a BAE Systems NavFire™ GPS Receiver (GPSR), enhancing its interface with nominal +28 Vdc MIL-STD power and RS-422 signal conversion. NavFire™ signals are made available on configurable connectors suited for direct connection to a flight computer or simultaneous connection to an Emcore SDN500 INS and flight computer. The NFC replicates the GPS 1PPS signal to five RS-422 outputs and one 3.3V CMOS output, and provides a key-loading interface via DB-9 connector.



## [ CAPABILITIES ]

## Features & Applications

### Key Features

#### ♦ MIL-STD Power Interface

Accepts 9–60 Vdc input with internal EMI filtering and conversion to +5 Vdc for the hosted GPSR, eliminating the need for external power conditioning.

#### ♦ RS-422 Signal Conversion

Converts NavFire™ 3.3V CMOS outputs to RS-422 for direct interfacing to flight computers and other standard avionics buses.

#### ♦ 1PPS Fan-Out

Distributes the GPSR's 1PPS synchronization signal to five RS-422 outputs and one CMOS output simultaneously for multi-system timing distribution.

#### ♦ SDN500 INS Tightly Coupled Interface

Enables tightly coupled GPS/INS integration with the Emcore (Systron-Donner) SDN500-xx76 IMU, combining GPSR and IMU data into a blended INS solution.

#### ♦ Key Loading Interface

Provides a DB-9 encryption key loading port to support classified GNSS operation.

#### ♦ Optional Auxiliary Power and Timing Signals

Battery backup input, 10.949 MHz time synchronization, 50 Hz T20 clock, and spin pulse output are all available as optional interfaces.

## Typical Applications

#### ♦ Launch Vehicle GPS/INS Navigation

Interfaces a NavFire™ GPSR to a flight computer for GPS-based navigation during ascent.

#### ♦ Tightly Coupled GPS/INS Integration

Pairs with an SDN500 IMU for blended inertial/GPS navigation on spinning or high-dynamic vehicles.

#### ♦ Multi-System 1PPS Distribution

Distributes GPS timing to multiple avionics subsystems requiring synchronized time references.

#### ♦ Classified GNSS Operations

Supports encryption key loading for M-code or anti-jam GPS operation on government missions.

# Key Specifications

| SPECIFICATION         | VALUE                                                             |
|-----------------------|-------------------------------------------------------------------|
| ELECTRICAL            |                                                                   |
| Input Voltage         | 9 – 60 Vdc (EMI Filtered)                                         |
| Input Current         | Typical 140 mA continuous at 28 Vdc                               |
| Power Connector       | PT02E-8-4P circular                                               |
| I/O Connector         | DB-50                                                             |
| Key-Loading Connector | DB-9                                                              |
| 1PPS Outputs          | 5x RS-422 + 1x 3.3V CMOS                                          |
| GPS RF                | L1/L2 RF connectors exposed with hold-down bracket                |
| MECHANICAL            |                                                                   |
| Size (L × W × H)      | 6.25" x 4.25" x 2" (including GPS RF connector hold-down bracket) |
| Weight                | Nominal 2.3 lbs.                                                  |
| Case Material         | 7075 aluminum, Alodine coated                                     |
| ENVIRONMENTAL         |                                                                   |
| Operating Temperature | -24° to +61°C (Acceptance Levels)                                 |