



## ***NDS-1 Navigation Development System Kit***

### **Description**

The Navigation Development System (NDS) Kit for Sparton's DC-4, GEDC-6 and AHRS-8 navigation sensors provides a convenient connection of the sensor to a computer or a target system. It also supports connection to the sensor debug port and to the sensor test and GPIO pins.

The adapter board part of NDS-1 Kit provides both an RS232 and a USB interface for communicating with the DC-4, GEDC-6 and AHRS-8. Power is available from either an AC adapter (included) or from a USB host port.

### **Features**

- Low insertion force sensor mating sockets for easy plug-in installation
- RS232 interface with DB9 connector
- USB interface with Mini-B connector (Com Port Emulation)
- Universal AC power adapter designed to support most international voltages and outlets
- Can also be powered from USB host port through USB cable
- Support for programming through either RS232 or USB port
- Provides access to sensor debug port, test pin, and GPIO pin
- Employs non-magnetic connectors and other components to minimize magnetic interference with the sensor
- Mounting holes for optional alignment blocks (to assure repeatable alignment of the sensor in testing applications)
- Compact size
- RoHS Compliant Product

### **NDS-1 Navigation Development System Kit Contents**

- NDS-1 Adapter Board with universal AC power adapter (navigation sensor sold separately)
- Non-magnetic Serial Cable
- USB Cable
- CD containing NDS-1 application software and user documentation

### **User Instructions**

- User instructions are provided in the NDS-1 Navigation Development System Users Guide

### **Applications**

- Sensor evaluation and testing
- Sensor programming via software interface
- Software development



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## Connections

### Sensor Sockets J1 and J2:

Connector – Pin Number	Pin Name	I/O	Function
J1-1	V_TEST	I	3.3V regulator output for test purposes (factory use only)
J1-2	DEBUG_RXD	O	3.3V logic RXD output to Sensor Debug Port (factory use only)
J1-3	DEBUG_TXD	I	3.3V logic TXD input from Sensor Debug Port (factory use only)
J1-4		N/A	pin blocked for keying
J1-5	#WP_EEPROM	O	3.3V logic, active-low EEPROM write protect
J1-6	GPIO	I/O	General purpose I/O pin from Sensor for debug purposes
J1-7	GND	N/A	System Ground
J2-1	V+	O	+5V power supply output.
J2-2	USER_RXD	O	3.3V logic RXD output to Sensor User Com Port
J2-3	USER_TXD	I	3.3V logic TXD input from Sensor User Com Port
J2-4	#RESET	O	3.3V logic, active-low reset output. Used with Sensor programming.
J2-5	#EINT0	O	3.3V logic, active-low interrupt output. Used with Sensor programming.
J2-6	GND	N/A	System Ground
J2-7	GND	N/A	System Ground

### User Com Port Connector J3:

Connector – Pin Number	Pin Name	I/O	Function
J3-1		N/A	No connection
J3-2	RS232_TXD	O	RS232 TXD output from User Com Port
J3-3	RS232_RXD	I	RS232 RXD Input to User Com Port
J3-4	RS232_DTR	I	RS232 DTR Input to User Com Port (used for programming)
J3-5	GND	N/A	System Ground
J3-6		N/A	No connection
J3-7	RS232_RTS	I	RS232 RTS Input to User Com Port (used for programming)
J3-8		N/A	No connection
J3-9		N/A	No connection

### User USB Port Connector P2:

Connector – Pin Number	Pin Name	I/O	Function
P2-1	VCC	I	+5V power supply input (from USB Host. Max load = 80mA)
P2-2	D-	I/O	USB Data -
P2-3	D+	I/O	USB Data +
P2-4	GND	N/A	System Ground
P2-5	GND	N/A	System Ground
P2-Shell	GND	N/A	System Ground

### Debug Port Connector P8:

Connector – Pin Number	Pin Name	I/O	Function
P8-1	GND	N/A	System Ground
P8-2		N/A	No connection
P8-3	USB_PWR	I	+5V power supply input (from USB/RS232 converter cable. Max load = 80mA)
P8-4	RS232_RXD	I	3.3V logic RXD Input to Debug Port (factory use only)
P8-5	RS232_TXD	O	3.3V logic TXD Output to Debug Port (factory use only)
P8-6		N/A	No connection

Please visit us at [www.spartonnavex.com](http://www.spartonnavex.com) for additional information on the Sparton Navigation and Exploration line of navigational sensors.

(Specifications subject to change without notice)