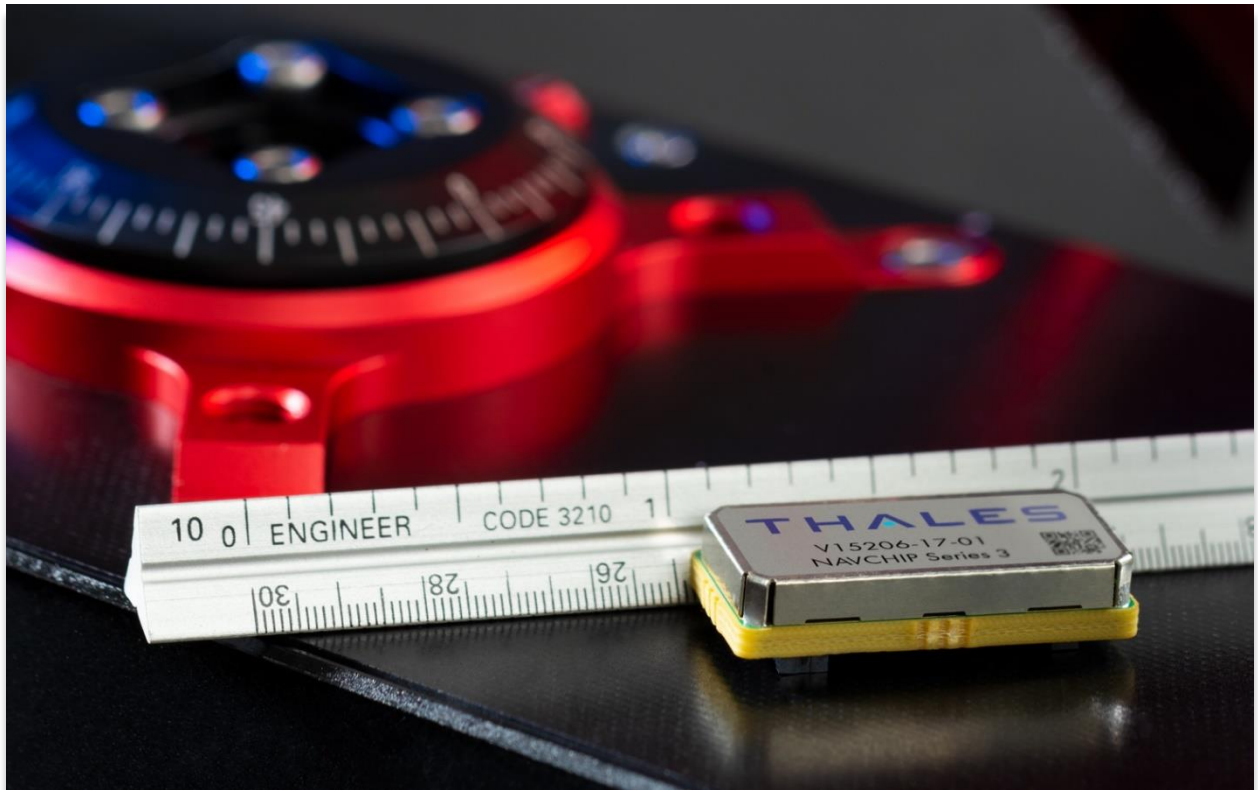# THALES

THALES VISIONIX, a Division of THALES DEFENSE AND SECURITY, INC

NavChip™
Evaluation Kit Guide

MNL-0051(B)

INTRODUCTION

This guide describes the RS422 and USB/TTL Serial evaluation kits for use with the NavChip IMU. The NavChip is not included in these kits and is sold separately.

NAVCHIP PART NUMBERS

V50024-17-02	NavChip
V15206-17-02	NavChip Series 3, Class A
V15206-17-01	NavChip Series 3, Class B

DOWNLOADS

NavChip documentation and software development kit are available for download at the link below.

http://www.thalesvisionix.com/navchip

If you have any questions regarding the material that is covered please contact InterSense Technical Support by e-mail at
techsupport@thalesvisionix.com or by phone at 781-541-7624

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RS-422 EVALUATION KIT

Part number V50104-03-01

Evaluation Kit Contents:
Please note: NavChip is sold separately*
* *V50013-08-01, RS-422 Adapter Assembly*
* *V14568-09-01, Molex 6 to Pigtail (2 meters)*

The RS-422 Adapter is a miniature circuit card assembly that has a slightly larger footprint than the NavChip. The RS-422 Adapter has mating connectors for the NavChip interface, an RS-422 level-shifter, on-board regulation, and four holes to securely mount the assembly into a system while allowing wired connectivity to a host board. The RS-422 link interfaces through a high friction Molex connector that allows users to fabricate their own interface cable.

If you have any questions regarding the material that is covered please contact InterSense Technical Support by e-mail at
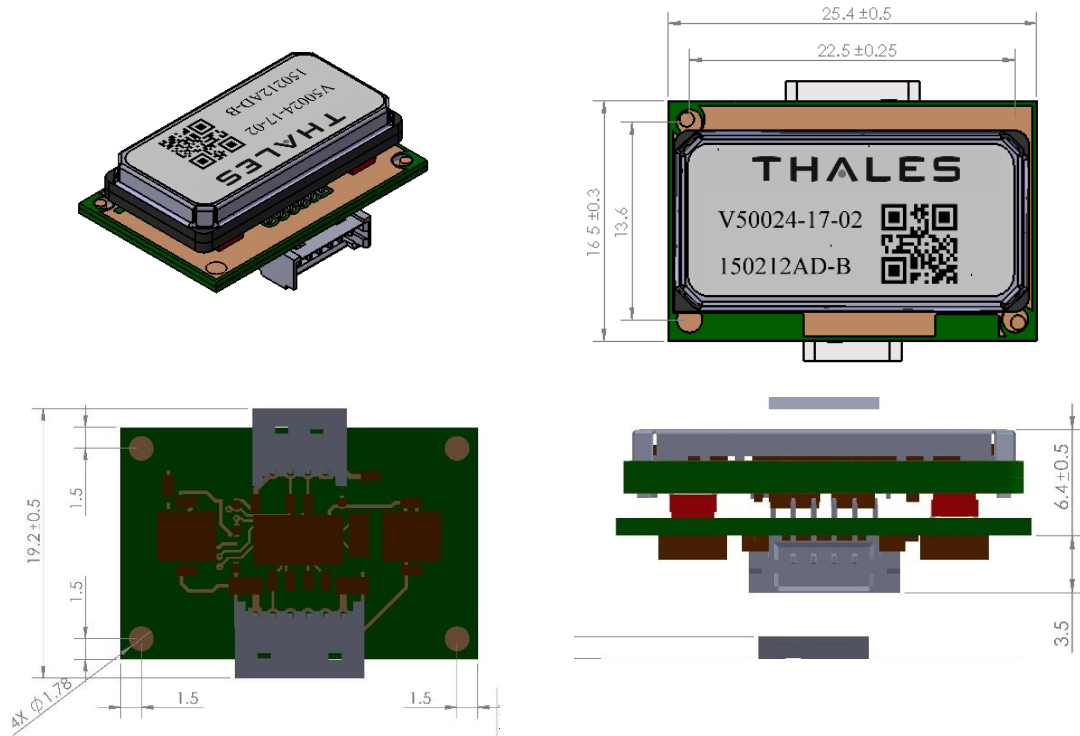techsupport@thalesvisionix.com or by phone at 781-541-7624

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FIGURE 1: RS-422 ADAPTER BOARD MECHANICAL DIMENSIONS (WITH NAVCHIP INSTALLED)

NavChip Installation on RS-422 Adapter:

Installing a NavChip onto an RS-422 Adapter is very simple. Before starting the process, ensure you are working on a static dissipative surface, or have a static band snuggly around your wrist. This will minimize any damage to the NavChip or the Adapter as you proceed. On the bottom of the NavChip you will notice it has two sets of interface connectors, P1 connector (male/blue), and J1 (female/red).

The NavChip can only be installed one way onto the RS-422 adapter. In **Figure 2** the receiving connectors have been highlighted. Place the NavChip over their counter-parts, as illustrated below, and press gently until you hear both sides of the NavChip click into place.
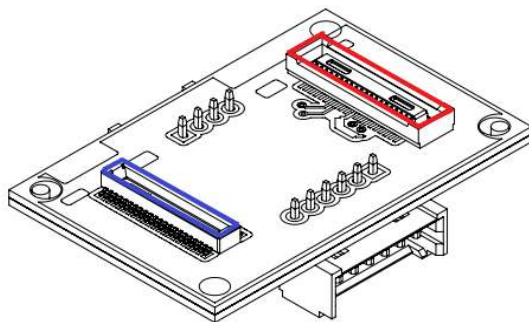

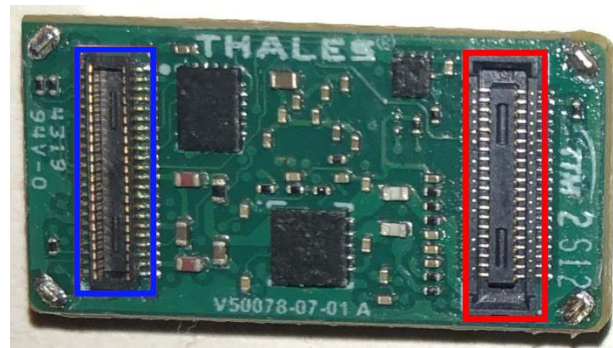**FIGURE 2: RS-422 ADAPTER WITH MALE/FEMALE CONNECTORS CALLED OUT**

FIGURE 3: NAVCHIP WITH MALE/FEMALE CONNECTORS CALLED OUT
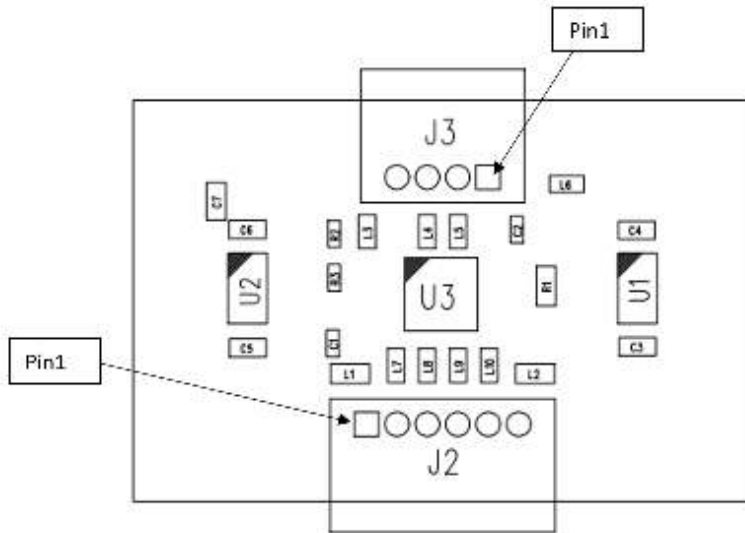
Connectors:

FIGURE 4: TOP VIEW OF RS-422 ADAPTER WITH PIN 1 CALLED OUT FOR EACH CONNECTOR
Please note: J3 Connector is the I2C interface. Please contact Thales Visionix for additional details.

TABLE 1: RS-422 ADAPTER J2 CONNECTOR PIN DESCRIPTIONS
Connector Type: Molex 53048-0610

PIN	PIN NAME	PIN TYPE	PIN DESCRIPTION
1	Vdd	Power	+5Vdc to +12Vdc
2	RX+	Input (digital)	UART receive input
3	RX-	Input (digital)	UART receive input
4	TX-	Output (digital)	UART transmit output
5	TX+	Output (digital)	UART transmit output
6	GND	Ground	Power Ground

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USB/TTL Serial Evaluation Kit

Part number V50103-03-01

Evaluation Kit Contents:

Please note: NavChip is sold separately

- V50019-08-01, PCBA Adapter USB
- V14624-09-01, Harness, Molex 8, Twist Pair Pins 6 & 7 (12in)
- V04-36-0003, USB 2.0 B Micro Male to A Male (2 meters)

The USB / TTL Serial Adapter assembly features a Micro-B USB interconnect to simplify setup for evaluation or integration of the NavChip. The Adapter can interface through either the Micro-USB or through an on-board Molex connector, allowing for a high retention USB interconnect if required.

The Adapter can also be configured for TTL serial through on-board jumpers. The TTL serial interface is only available through the Molex connector.
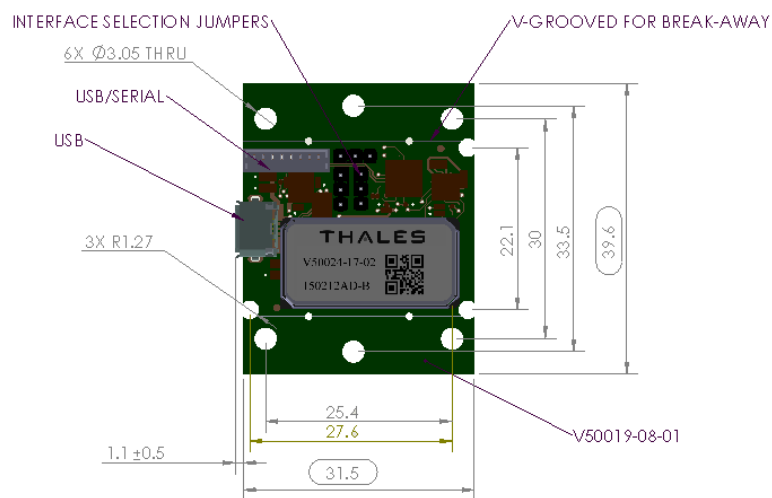

FIGURE 5: USB/TTL SERIAL ADAPTER MECHANICAL DIMENSIONS (WITH NAVCHIP INSTALLED)

If you have any questions regarding the material that is covered please contact InterSense Technical Support by e-mail at techsupport@thalesvisionix.com or by phone at 781-541-7624

NavChip Installation on USB Adapter:

Before starting the process, ensure you are working on a static dissipative surface, or have a static band snuggly around your wrist. This will minimize any damage to the NavChip or the Adapter as you proceed. On the bottom of the NavChip you will notice it has two sets of interface connectors, P1 connector (male/ blue), and J1 connector (female/red).

On the USB adapter, similar to the RS-422 adapter, the NavChip can only be installed in one direction In **Figure 6** the receiving connectors have been highlighted. Place the NavChip over their counter-parts, as illustrated below, and press gently until you hear both sides of the NavChip click into place.
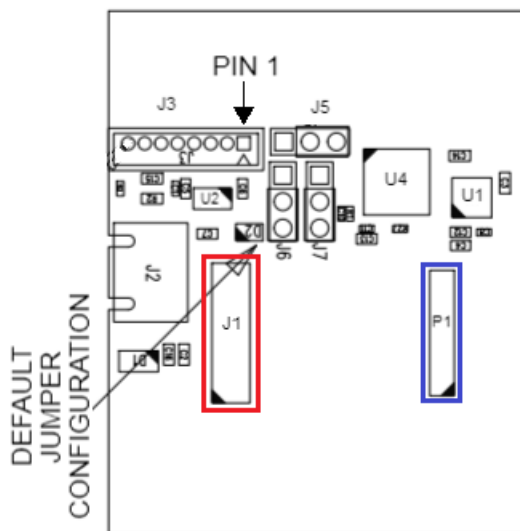

FIGURE 6: TOP VIEW OF USB / TTL SERIAL ADAPTER WITH PIN 1 CALLED OUT FOR J3 CONNECTOR (UPSIDE DOWN)
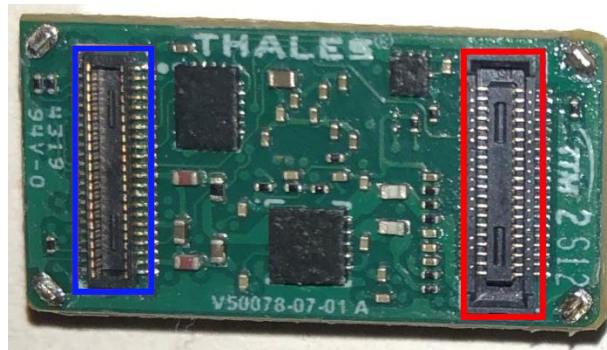

FIGURE 7: NAVCHIP WITH MALE/FEMALE CONNECTORS CALLED OUT

TABLE 2: USB / TTL SERIAL ADAPTER J3 CONNECTOR PIN DESCRIPTIONS
Connector Type: Molex 53047-0810

PIN	PIN NAME	PIN TYPE	PIN DESCRIPTION
1	USB D+	Digital	Bi-Directional USB data
2	USB D-	Digital	Bi-Directional USB data
3	VDD	Power	Power for TTL Serial Mode
4	RX	Input (digital)	TTL Serial UART Input
5	TX	Output (digital)	TTL Serial UART Output
6	GND7	Ground	Power Ground
7	SYNC	Input	TTL sync input to external rising edge signal
8	USB 5V	Power	Power for USB Mode

J3, Molex 53047-0810, PicoBlade connector. Mates with Molex 51021-0800. See Molex webpage for crimp terminals

TABLE 3: USB/ TTL INTERFACE SELECTION JUMPERS

JUMPER CONFIGURATION		
	TTL	USB (DEFAULT)
J5	1-2	2-3
J6	1-2	2-3
J7	1-2	2-3

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