

Not Recommended for New Designs – Special Order

## Summary

- ) USB Powered Adaptor for Serial Interface and General Purpose IO
- ) Software selectable clock rates (1, 13, 26 and 52MHz)
- ) Supports RFFEv2-like and SPI interfaces
- ) Trigger support for time critical applications
- ) Wide operating temperature range (0°C to 70°C)
- ) Field-upgradable unit for quick and easy migration to new feature releases or customized (customer specified) solutions.



## Description

The USB SCOUT is a fast and flexible USB to serial/GPIO Adaptor for general purpose control applications. It provides the user with a configurable bridge between USB and 8 programmable IOs.

The bus-powered adaptor simplifies interconnectivity. The adaptor's small size allows it to be physically located more closely to the device under test. This proximity helps reduce cable lengths and minimizes noise coupling.

The interface voltage can be set via software to 1.2V or 1.8V in RFFE mode and up to 3.3V in SPI mode. Alternatively, the  $V_{IO}$  line can be configured as an input from the DUT to provide any interface voltage between 1.2 and 3.3 volts.

Any terminal emulator can be used to interact with the device. Control and operation is provided using a simple command line programming interface is provided. The generic and easy to use API facilitates integration of Scout in Automated Test and Measurement applications. The unit is shipped with a Labview™ example application. Configuration of a general purpose IO pins to support external triggering is possible, facilitating the use in timing critical setups.

USB 2.0 plug and play compatibility has been verified on Windows XP, Windows 7 and Windows 10 operating systems.

## Features

### Serial Interface

The two serial interfaces currently supported are RFFEv2 (single master only) and a highly configurable SPI master mode with multiple slave select IO. The flexible hardware-based timing solution was selected to ensure reliable and consistent communications.

### GPIO

The general purpose I/O direction and voltage can be configured in software. Non-standard I/O voltages can be accommodated by providing a  $V_{IO}$  signal from an external source. The I/O lines are time synchronized with the serial port. The outputs have high drive (12mA) capability.

### Trigger

A BNC connector is provided to support external trigger operation. Operating voltage is set to  $V_{IO}$ .

### Optional Non-USB Supply

For applications where the USB host may be current starved, an external 5V power supply can be used to power the device.

### Custom Releases

In addition to its timing advantages, Scout was designed around an FPGA-based platform to allow expansion into other 'personalities'. Contact SignalCraft for more information about custom interface support.

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## Specifications

### USB

Supports USB 2.0, Full and High Speed Modes

### General Purpose Outputs

Number of Ports : 8 maximum

Output Voltage: +0.8V min, +3.3V max ( $V_{IO}$  and load dependent)

Output Current: +/-12mA max ( $V_{IO} = +3.3V$ )

### General Purpose Inputs

Number of Ports : 8 maximum

Input Voltage: 0V min, +3.6V max

Input Capacitance: 4.0 pF typical

Input Transition Rate: 5ns/V max.]

Input Voltage (No Damage): -0.5V min, +4.6 V max

### Interface

USB type-B

Status LED (power or user programmable)

Interface I/O provided via terminal block w/ press fit connectors.

DUT Interface mating connector should be Phoenix Contact P/N 1881422 or equivalent.

### Environmental

Operating Temperature: 0°C to 70 [C

Storage Temperature: -40 to +85 [C

Humidity: 5% to 85%, non-condensing

### ESD Protection (at DUT Interface)

HBM JESD22-A114E Class 3B exceeds 8000 V

MM JESD22-A115-A exceeds 200 VCDM JESD22-C101C exceeds 1000 V

### Regulatory

FCC approval

RoHS Compliant

### Dimensions and Weight

Size: 5" x 3" x 1"

Weight: <200g

### Power Requirements

USB (< 500mA) powered.

Optional User-Supplied: 5Vdc +/- 5%

Optional power supply supports applications where the USB host is unable to supply enough current (<500mA) to power the SC4410. Typical examples of this occur when non or underpowered USB hubs are used with multiple peripherals.

### Support

The USB-Serial adaptor is fully field upgradable and is provided with a 1-year support contract. Any feature enhancements or firmware updates released within 1 year of purchase can be obtained, free of charge.

### Calibration

Calibration is not required on this product.

### Warranty

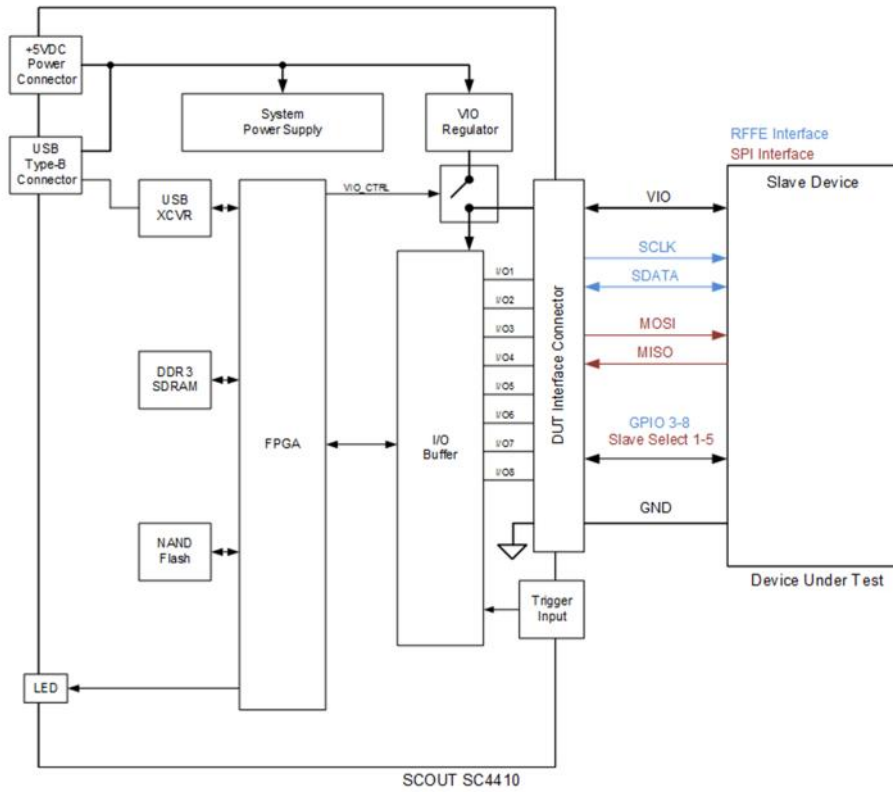
SCT provides a full 1 year replacement warranty against any manufacturing defect when used under normal operating conditions.

SCT can provide repair services for products no longer covered under warranty.

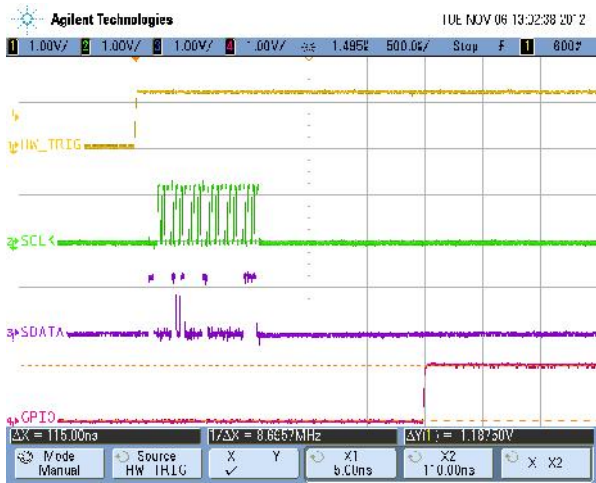
### Ordering Information

The USB Scout (SCT P/N SC4410) can be ordered on-line by visiting [www.signalcraft.com](http://www.signalcraft.com) or sending an email to [info@signalcraft.com](mailto:info@signalcraft.com) .

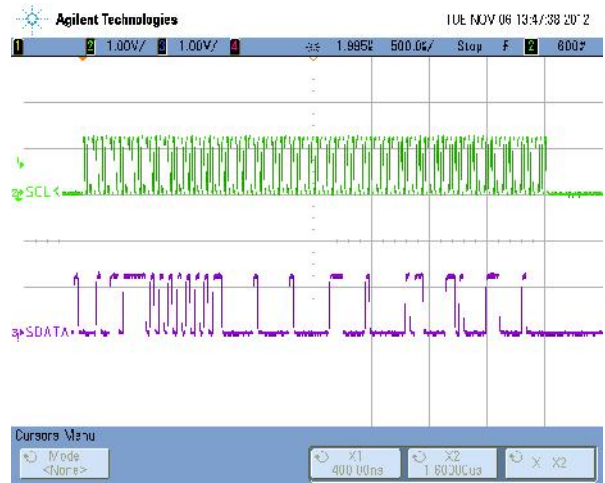
# Block Diagram



# Timing Examples



Hardware Triggered Write Command



Extended Register Write Command

SignalCraft Technologies Inc. is a proud member of the National Instruments Alliance Partner network.

