



**STINGRAY 2 CHANNEL
USB OSCILLOSCOPE
(HT070202)
QUICK START GUIDE**



Need more help?



AUS: +61 2 9729 0999 **USA East:** (888) 298 8116 **USA West:** (949) 490 5660
Europe: +43 720 883968 **UK:** 0121 285 6650 **NZ:** 09 887 0616



www.haltech.com/support



support@haltech.com

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Haltech products are designed and sold for sanctioned off-road/competition non-emissions controlled vehicles only. Using Haltech products for street/road use on public roads is prohibited by law. It is the responsibility of the installer and/or user of this product to ensure compliance with all applicable local and federal laws and regulations. Please check with your local vehicle authority before using any Haltech product

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No responsibility whatsoever is accepted by Haltech for the fitment of Haltech Products. The onus is clearly on the installer to ensure that both their knowledge and the parts selected are correct for that particular application. Any damage to parts or consequential damage or costs resulting from the incorrect installation of Haltech products are totally the responsibility of the installer.

Always disconnect the battery when doing electrical work on your vehicle. Avoid sparks, open flames or use of electrical devices near flammable substances. Do not run the engine with a battery charger connected as this could damage the ECU and other electrical equipment. Do not overcharge the battery or reverse the polarity of the battery or any charging unit. Disconnect the Haltech ECU from the electrical system whenever doing any welding on the vehicle by unplugging the wiring harness connector from the ECU. After completing the ECU installation, make sure there is no wiring left un-insulated. Uninsulated wiring can cause sparks, short circuits and in some cases fire. Before attempting to run the engine ensure there are no leaks in the fuel system. All fuel system components and wiring should be mounted away from heat sources, shielded if necessary and well ventilated. Always ensure that you follow workshop safety procedures. If you're working underneath a jacked-up car, always use safety stands!

HALTECH LIMITED WARRANTY

Unless specified otherwise, Haltech warrants its products to be free from defects in material or workmanship for a period of 12 months from the date of purchase, valid in the original country of purchase only. Proof of purchase, in the form of a bill of sale or receipted invoice, which indicates that the product is within the warranty period, must be presented to obtain warranty service. Haltech suggests that the purchaser retain the dealer's dated bill of sale/receipt as evidence of the date of retail purchase. If the Haltech product is found to be defective as mentioned above, it will be replaced or repaired if returned prepaid along with proof of purchase. This shall constitute the sole liability of Haltech. To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representations, either expressed or implied, including any implied warranty of merchantability or fitness. In no event shall Haltech be liable for special or consequential damages.

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Please include a copy of the original purchase invoice along with the unused, undamaged product and its original packaging. Any product returned with missing accessory items or packaging will incur extra charges to return the item to a re-saleable condition. All product returns must be sent via a freight method with adequate tracking, insurance and proof of delivery services. Haltech will not be held responsible for product returns lost during transit. The sale of any sensor or accessory that is supplied in sealed packaging is strictly non-refundable if the sealed packaging has been opened or tampered with. This will be clearly noted on the product packaging. If you do not accept these terms please return the sensor in its original unopened packaging within 30 days for a full refund.

Returning a sensor or accessory product within 30 days of purchase: Product may be returned for credit or full refund. (Any sealed packaging must not have been opened or tampered with)

Returning a sensor or accessory product after 30 days of purchase: Product may be returned for credit only (no refunds given) and is subject to a 10% Restocking fee. (Any sealed packaging must not have been opened or

Caution: Measuring High Voltages

The Haltech Stingray 2 Channel USB Oscilloscope is rated at +/- 50V DC Maximum Input (35V RMS AC) even with a x 10 oscilloscope lead attached. Measuring higher voltages than this directly may damage the instrument and invalidate the warranty. The instrument is not isolated. The ground of the internal circuitry connects directly to the ground of the host PC via the USB connection.

Troubleshooting

If a static / ESD discharge occurs down the earth lead of the oscilloscope, the unit may lock up and require the host PC to be re started to resume operation. In practice, this is an unusual condition and should not affect normal operation.



Hardware Information

The Haltech Stingray 2 Channel USB Oscilloscope has the following connections

- Channel A Input
- Channel B Input
- Signal Generator Output / External Trigger Input
- USB Input

The connections are outlined in figures 1 and 2 below

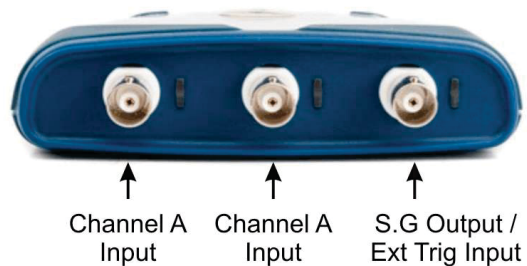


Figure 1- Haltech Stingray 2 Channel USB Oscilloscope front panel connections

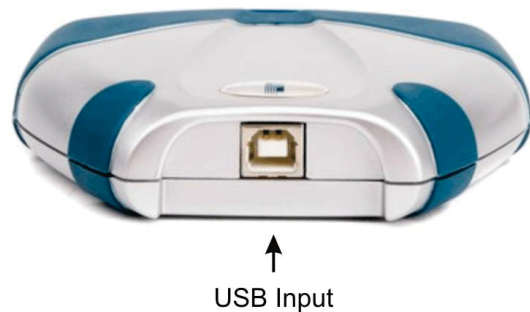


Figure 2- Haltech Stingray 2 Channel USB Oscilloscope rear panel connection

Haltech Stingray 2 Channel USB Oscilloscope Quick Start Guide

Congratulations on your purchase of the Haltech Stingray 2 Channel USB Oscilloscope. This guide contains the specifications and installation procedure for the oscilloscope, drivers and application software.

The Haltech Stingray 2 Channel USB Oscilloscope combines the functions of Oscilloscope, Data Logger, Spectrum Analyzer, Volt Meter, Frequency Meter and Signal Generator into a single instrument.

It features simultaneous 12-bit sampling on both channels, a native sampling rate of 1MS/s (20MS/s for repetitive signals) and sophisticated hardware triggering including delayed time base and pulse width. It also has a 3rd channel which can be a waveform generator output or an external trigger input. Powered from USB, the Haltech Stingray 2 Channel USB Oscilloscope needs no external power supply.

The Software Easy Scope II (oscilloscope) and Easy Logger (data logging) software for windows is included on the Haltech Resource CD supplied.

Alternatively it can be downloaded from the Haltech website www.haltech.com

Haltech Stingray 2 Channel USB Oscilloscope Kit HT070202 includes

- Haltech Stingray 2 Channel USB Oscilloscope
- 2 x Probes
- USB Cable
- Case
- Haltech Resource / Software CD
- Quick Start Guide

Features

Hardware Features

- Combined Oscilloscope, Data Logger, Signal Generator, Spectrum Analyzer, Voltage Meter and Frequency Meter functions
- 12-Bit ADC Resolution
- 12-Bit data streaming simultaneously on both channels
- 32k Byte Waveform buffer
- Sampling Rate
 - Oscilloscope – 20MS/s (repetitive) , 1MS/s native
 - Data logger – up to 50kS/s
- Maximum input voltage +/- 50V DC (35V RMS AC)
- AC/DC coupling
- Edge min / max, pulse width and delayed trigger modes
- Analog Bandwidth 250KHz
- Inbuilt 10-bit waveform generator with +/- 3.5V output range and 1k buffer
- Bus Powered USB Interface (250mA)
- Instrument carrying bag included
- Attractive enclosure with rubberized mouldings
- Dimensions – W: 116mm x H: 30mm x D: 100mm
- Weight: 160g (excluding cable)

Easy Scope II Software Features

- Timebase – 2us / div to 50ms / div in 14 steps
- Y-Scale 10mV / div to 5V / div
- On screen X and Y measurement cursors
- FFT Spectrum Analyser display on both channels
- Meter displays – Min, Max, Mean, True RMS Voltage and Frequency
- Save results to CSV file
- Save screen to BMP file
- Waveform generation – Sine, Square, Triangle, Sawtooth and user defined waveforms

Easy Logger Software Features

- Sampling Rate selectable from >100,000 samples / sec to 100 sec/sample
- Flexible Y-axis scaling (V, mV, User Defined)
- Flexible X-axis scaling (Sample Number or Time)
- Save to CSV, BMP, TXT or Binary files
- Up to 3 on-screen cursors to track data
- Up to 4 pop-up or email alerts
- Text memos for incorporating user notes in the data

Getting Started

The Haltech Stingray 2 Channel USB Oscilloscope requires device drivers to be installed on your PC to enable communication with the instrument. Install the device drivers prior to installing the applications below.

Driver Installation

The latest device drivers are available through the Microsoft Windows Update service. Simply plug in the Haltech Stingray 2 Channel USB Oscilloscope via the USB Cable provided in the kit. When the Found New Hardware wizard appears, allow it to find the drivers from the windows update service. Windows 7 defaults to automatically download the drivers without prompts.

The Haltech Stingray 2 Channel USB Oscilloscope utilizes a 2-Channel FTDI chip, so the wizard will re-appear a second time to install the drivers for the second channel. On completion of installation the device is ready to use.

Application Installation

Easy Scope II

The Easy Scope II application file is found on the software page on the Haltech Resource CD, Click on the Easy Scope II software link to start the installation. Follow the on screen prompts to install the application.

Easy Logger

The Easy Logger application file is found on the software page on the Haltech Resource CD, Click on the Easy Logger software link to start the installation. Follow the on screen prompts to install the application.

Once installed the applications can be accessed through the Windows start menu