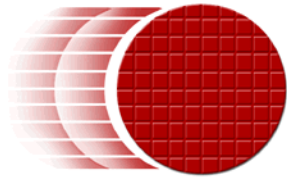


Preliminary - Subject to Change



**FTDI**<sup>TM</sup>  
Chip

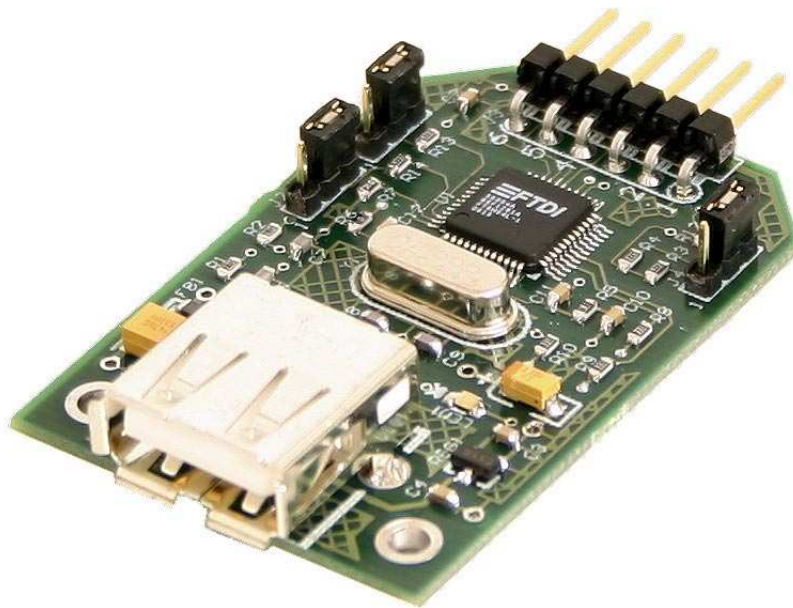
**Future Technology  
Devices International Ltd.**



**VINCULUM**  
BINDING USB TECHNOLOGIES

**VDrive1**

**Vinculum VNC1L-1A Evaluation Module**



<http://www.vinculum.com>

# 1. Introduction and Features

## 1.1 Introduction

---

The VDrive1 evaluation module provides an easy solution for adding a USB Flash disk interface to an existing product. Only four signal lines plus 5V supply and ground are required to be connected to it. Using the Vinculum DIFS firmware the VNC1L-1A's I/O interface can be selected between the serial UART or SPI using the on-board jumper pins. Not only is the VDrive1 ideal for evaluation and development of VNC1L-1A designs, but also an attractive quantity discount structure makes this module suitable for incorporation into finished product designs. The VDrive1 is ideal for commercial products such as domestic goods, set top box, etc., as well as industrial products such as data loggers, software upgradable products, etc.

The Vinculum VNC1L-1A is the first of F.T.D.I.'s Vinculum family of Embedded SoC USB host controller integrated circuit devices. Not only is it able to handle the USB Host Interface, and data transfer functions but owing to the inbuilt MCU and embedded Flash memory, Vinculum can encapsulate the USB device classes as well. When interfacing to mass storage devices such as USB Flash drives, Vinculum also transparently handles the FAT File structure communicating via UART, SPI or parallel FIFO interfaces via a simple to implement command set. Vinculum provides a new cost effective solution for providing USB Host capability into products that previously did not have the hardware resources available. The VNC1L-1A is available in Pb-free (RoHS compliant) compact 48-Lead LQFP package.

## 1.2 Features

---

- Uses F.T.D.I.'s VNC1L-1A embedded USB host controller I.C. device.
- USB 'A' type socket to connect USB Flash disk.
- Only four signals to connect, excluding power and ground.
- Jumper selectable UART or SPI interfaces.
- Single 5V supply input.
- Power indicator, and USB traffic indicator LED's.
- Uses Vinculum DIFS firmware and command set.
- Program or update firmware via USB Flash disk or via UART or SPI interface.
- VNC1L-1A firmware programming control pins PROG# and RESET# brought out onto jumper interface
- VDIP1 is a Pb-free, RoHS complaint development module.
- Schematics, and firmware files available for download from the [Vinculum website](#).

## 2. Dimensions

### 2.1 VDrive Board Dimensions

The VDrive1 board dimensions are shown below.

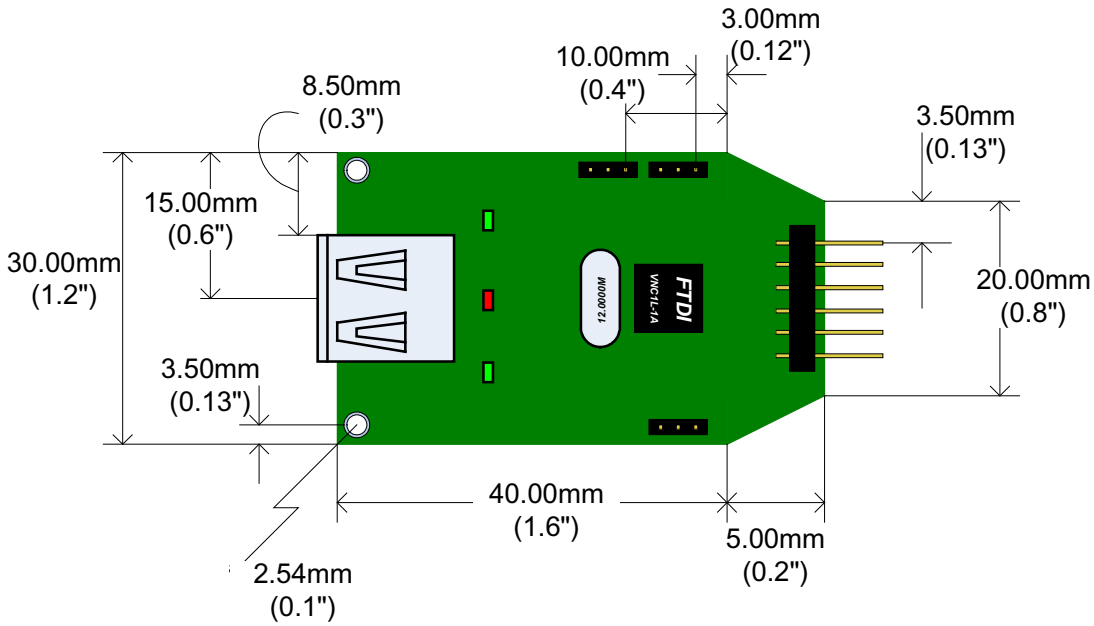


Figure 8 - VDrive1 dimensions, top view.

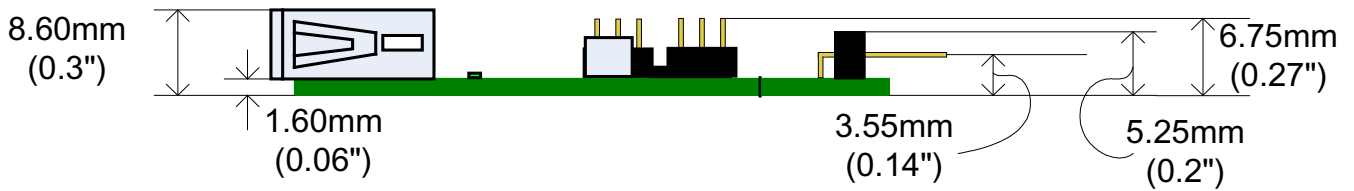


Figure 9 - VDrive1 dimensions, side view.

## Disclaimer

---

### Copyright © Future Technology Devices International Limited , 2006.

Version 0.90 - Initial Datasheet Created August 2006

Neither the whole nor any part of the information contained in, or the product described in this manual, may be adapted or reproduced in any material or electronic form without the prior written consent of the copyright holder.

This product and its documentation are supplied on an as-is basis and no warranty as to their suitability for any particular purpose is either made or implied.

Future Technology Devices International Ltd. will not accept any claim for damages howsoever arising as a result of use or failure of this product. Your statutory rights are not affected.

This product or any variant of it is not intended for use in any medical appliance, device or system in which the failure of the product might reasonably be expected to result in personal injury.

This document provides preliminary information that may be subject to change without notice.

### Contact FTDI

#### Head Office -

#### Future Technology Devices International Ltd.

373 Scotland Street,  
Glasgow G5 8QB,  
United Kingdom

Tel. : +(44) 141 429 2777

Fax. : +(44) 141 429 2758

E-Mail (Sales) : [sales1@ftdichip.com](mailto:sales1@ftdichip.com)

E-Mail (Support) : [support1@ftdichip.com](mailto:support1@ftdichip.com)

E-Mail (General Enquiries) : [admin1@ftdichip.com](mailto:admin1@ftdichip.com)

#### Regional Sales Offices -

#### Future Technology Devices International Ltd. (Taiwan)

4F, No 16-1,  
Sec. 6 Mincyuan East Road,  
Neihu District,  
Taipei 114,  
Taiwan, R.o.C.

Tel.: +886 2 8791 3570

Fax: +886 2 8791 3576

E-Mail (Sales): [tw.sales@ftdichip.com](mailto:tw.sales@ftdichip.com)

E-Mail (Support): [tw.support@ftdichip.com](mailto:tw.support@ftdichip.com)

E-Mail (General Enquiries): [tw.admin@ftdichip.com](mailto:tw.admin@ftdichip.com)

#### Future Technology Devices International Ltd. (USA)

5285 NE Elam Young  
Parkway, Suite B800  
Hillsboro,  
OR 97124-6499  
USA

Tel.: +1 (503) 547-0988

Fax: +1 (503) 547-0987

E-Mail (Sales): [us.sales@ftdichip.com](mailto:us.sales@ftdichip.com)

E-Mail (Support): [us.support@ftdichip.com](mailto:us.support@ftdichip.com)

E-Mail (General Enquiries): [us.admin@ftdichip.com](mailto:us.admin@ftdichip.com)

Website URL : <http://www.ftdichip.com>