High-Speed 7-Port USB 2.0 HUB

User Manual

Item# HUB7P

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Safety Instructions

Electrostatic Discharges (ESD)

A sudden electrostatic discharge can destroy sensitive components. Proper packaging and earthing rules must therefore be observed. Always take the following precautions.

- Transport boards and cards in electrostatically secure containers or bags.
- Keep electrostatically sensitive components in their containers, until they arrive at an electrostatically protected workplace.
- Only touch electrostatically sensitive components when you are properly earthed.
- Store electrostatically sensitive components in protective packaging or on anti-static mats.

Grounding Methods

The following measures help to avoid electrostatic damages to the device:

- Cover workstations with approved antistatic material. Always wear a wrist strap connected to workplace as well as properly grounded tools and equipment.
- Use antistatic mats, heel straps, or air ionizers for more protection.
- Always handle electrostatically sensitive components by their edge or by their casing.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting and removing connectors or connecting test equipment.
- Keep work area free of non-conductive materials such as ordinary plastic assembly aids and Styrofoam.
- Use field service tools such as cutters, screwdrivers, and vacuum cleaners which are conductive.
- Always place drives and boards PCB-assembly-side down on the foam.

Introduction

With industrial and OEM applications increasingly adding USB devices, the need for more USB ports becomes a necessity. The HUB7P is a powered USB 2.0 7-port hub that is perfect for adding high-speed USB ports to industrial computing platforms.

The HUB7P is USB 2.0 compliant, providing a full 480M bps data rate to the host, and is backwards compatible with USB 1.1 and 1.0 devices. The powered hub includes a wall-mount AC adapter that supplies a full 500mA to each attached USB peripheral. The hub is housed in a rugged plastic enclosure and status LEDs indicate external power, connection to the host, and fault conditions.

To prevent accidental disconnection of the USB cable, the HUB7P integrates a high-retention USB type "B" connector. Standard operating temperature range is 0˚C to 70˚C.

Features

- High-retention USB type "B" connector prevents accidental disconnection of USB cable
- Includes seven powered downstream USB ports with 500mA available per port
- Status LEDs indicate external power, connection to host, and fault conditions
- USB 2.0 compliant and backwards compatible with USB 1.1 and 1.0 devices
- Housed in rugged, attractive plastic enclosure

7 USB 2.0 ports with 500mA per port

Before You Get Started

Advisory Conventions

Warning – The highest level of importance used to stress a condition where damage could result to the product or the user could suffer serious injury.

Important – The middle level of importance used to highlight information that might not seem obvious or a situation that could cause the product to fail.

Note – The lowest level of importance used to provide background information, additional tips, or other non-critical facts that will not affect the use of the product.

What's Included

The HUB7P is shipped with the following items. If any of these items is missing or damaged please contact Sealevel for replacement.

- HUB7P – Sealevel High Speed 7-Port USB 2.0 Hub
- CA179 – 72" USB 'A' to 'B' Device Cable
- TR124 – Wall-mount AC power supply (5VDC @ 4A), locking DC connector
- Sealevel Software CD – Manual Only

Optional Items

Depending upon your application, you are likely to find one or more of the following items useful with the HUB7P. All items can be purchased from our website or by calling +1 864-843-4343.

USB Type A to USB Type A, 3 Meter Extension Cable (Item# CA214)	
The CA214 is a fully rated USB extension cable that adds three meters to any existing USB cable (maximum 5 meters). The CA214 has a type A male connector on one end and a type A female connector on the other end.	
USB Type A to USB Type B, 5 Meter Device Cable (Item# CA215)	
The CA215 is a fully rated 5 meter device cable that connects USB peripherals with a type B connector to the type A connector on a host PC. This cable provides the maximum 5 meters (16 feet) for a USB connection.	
USB Type A to USB Type B, 72" Device Cable (Item# CA179)	
The CA179 is a 72" USB device cable that connects USB peripherals with a Type B connector to the Type A connector on a host computer. The CA179 is USB 2.0 compliant and is compatible with USB 1.1 and 1.0 devices.	

Installation

Windows 98/ME/2000/XP/Vista/7™ Operating Systems

1. The HUB7P is fully supported as a generic USB hub device in Windows 98/ME/2000/XP/Vista/7™ operating systems and requires no separate driver. The Sealevel Software CD is included only for distribution of the user manual and other literature.
2. Simply connect the included wall-mount power supply to the HUB7P and then connect to an AC outlet. When the unit is successfully powered, the green LED will light.
3. Using the included USB device cable, plug the HUB7P into an available USB port on your host system.
4. The 'Found New Hardware' screen will appear and the hub will be automatically recognized as a generic USB hub device. When the unit is successfully recognized by the operating system, the yellow LED will light. During data transfers, this light will blink.
5. The hub is ready to use when you see the screen 'Your USB hub is installed and ready to use.'

 Windows NT is not USB aware and thus cannot support this device.

Linux Support

USB devices are supported in Linux kernel v2.4 or better. Refer to the help files included with your Linux distribution for specific instructions on adding generic USB hub devices.

Hardware Description

High-Retention Type B USB Connector

The upstream port integrates a high-retention type B connector that prevents accidental disconnection of the USB cable. Seven powered downstream USB ports provide 500mA per port.

Status LEDs

Status LEDs are also included on the front of all SeaI/O modules to indicate the following information:

- **ENABLE** (Yellow) – Indicates that the hub is successfully communicating with the host computer.
- **FAULT** (Red) – Lights when there is a problem with a downstream USB port. Disconnect the USB peripherals from the hub one at a time until the issue is isolated.
- **EXT PWR** (Green) – Indicates that the hub is properly connected to an external power source.

Technical Specifications

Power Requirements

+5V @ 4A (Maximum) via locking 2.1mm Barrel plug

Dimensions

Length	Width	Height
9.2"	5.3"	1.7"
23.32cm	13.34cm	4.25cm

Weight

0.8 lbs/0.4 kg

Environmental Specifications

Specification	Operating	Storage
Temperature Range	0˚C – 70˚C (32˚F – 158˚F)	-50˚C – 105˚C (-58˚F – 221˚F)
Humidity Range	10 to 90% R.H. Non-Condensing	10 to 90% R.H. Non-Condensing

Manufacturing

All Sealevel Printed Circuit boards are built to UL 94V0 rating and are 100% electrically tested. These printed circuit boards are solder mask over bare copper or solder mask over tin nickel.

Appendix A - Troubleshooting

The HUB7M is a generic USB hub and should provide years of trouble-free service. Should the device appear to not be functioning correctly, the following tips can eliminate most common problems without the need to call Technical Support.

1. Make sure the power supply is connected to the hub and to a live AC power outlet. The green LED on the front of the unit will be lit, indicating the hub is properly powered. Inspect the power supply or call for a replacement if the green LED does not light after connecting to power.

2. Make sure the hub is connected to a USB port using the included USB cable or quality replacement USB cable. The yellow LED will be lit when the hub is properly enumerated by the operating system.

3. The hub is supported in any USB aware operating system that supports generic USB hub devices, including Windows 98/ME/2000/XP/Vista/7™ operating systems and Linux (kernel v2.4 or better). Check to make sure that USB support is enabled in the System BIOS and it is functioning properly in the operating system. This can be done by using Device Manager in Windows.

4. If the red LED lights, there is a fault condition with one of the downstream USB ports. When a downstream USB peripheral pulls more than 500mA of power, the over current protection current will shut down the hub until the problem is resolved.

5. Disconnect your USB peripherals one at a time until the red LED goes out. Inspect the problem USB peripheral and replace, if necessary. Try connecting a different USB peripheral to the problem port. If the red LED lights on the same USB port with a different device, contact technical support for further assistance.

If these steps do not solve your problem, please call Sealevel's Technical Support at +1 864-843-4343. Our technical support is free and available from 8:00 AM to 5:00 PM Eastern Time Monday through Friday. For email support, contact support@sealevel.com.

Appendix B – How To Get Assistance

When calling for technical assistance, please have the device installed and ready to run diagnostics. If possible, have your user manual and current settings ready.

The Sealevel website is an excellent resource. The most current software updates and user manuals are available via our homepage by clicking on the 'Drivers' or 'Manuals' links located under 'Technical Support.' Manuals and software can also be downloaded from the product page for your device.

The FAQ section of our website answers many common questions. Refer to this helpful resource by visiting http://www.sealevel.com/faq.asp.

Technical Support

Monday – Friday
8:00 am to 5:00 pm EST
Phone: +1 (864) 843-4343
Email: support@sealevel.com
Web: www.sealevel.com

RETURN AUTHORIZATION MUST BE OBTAINED FROM SEALEVEL SYSTEMS, INC. BEFORE RETURNED MERCHANDISE WILL BE ACCEPTED. AUTHORIZATION CAN BE OBTAINED BY CALLING SEALEVEL AND REQUESTING A RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER.

Appendix C – Silk Screen – HUB7P PCB
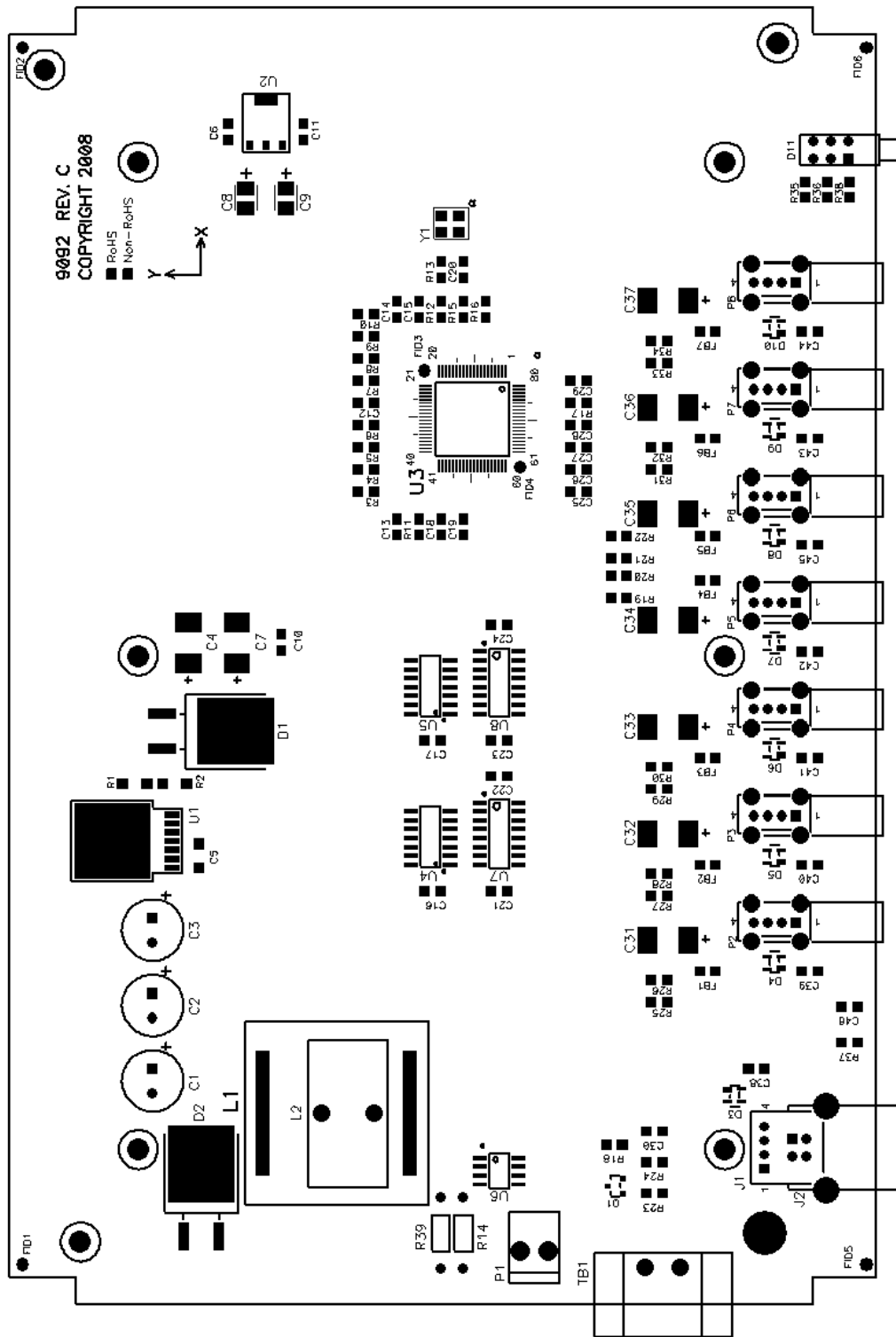
Appendix D – HUB7P Board Mounting Outline
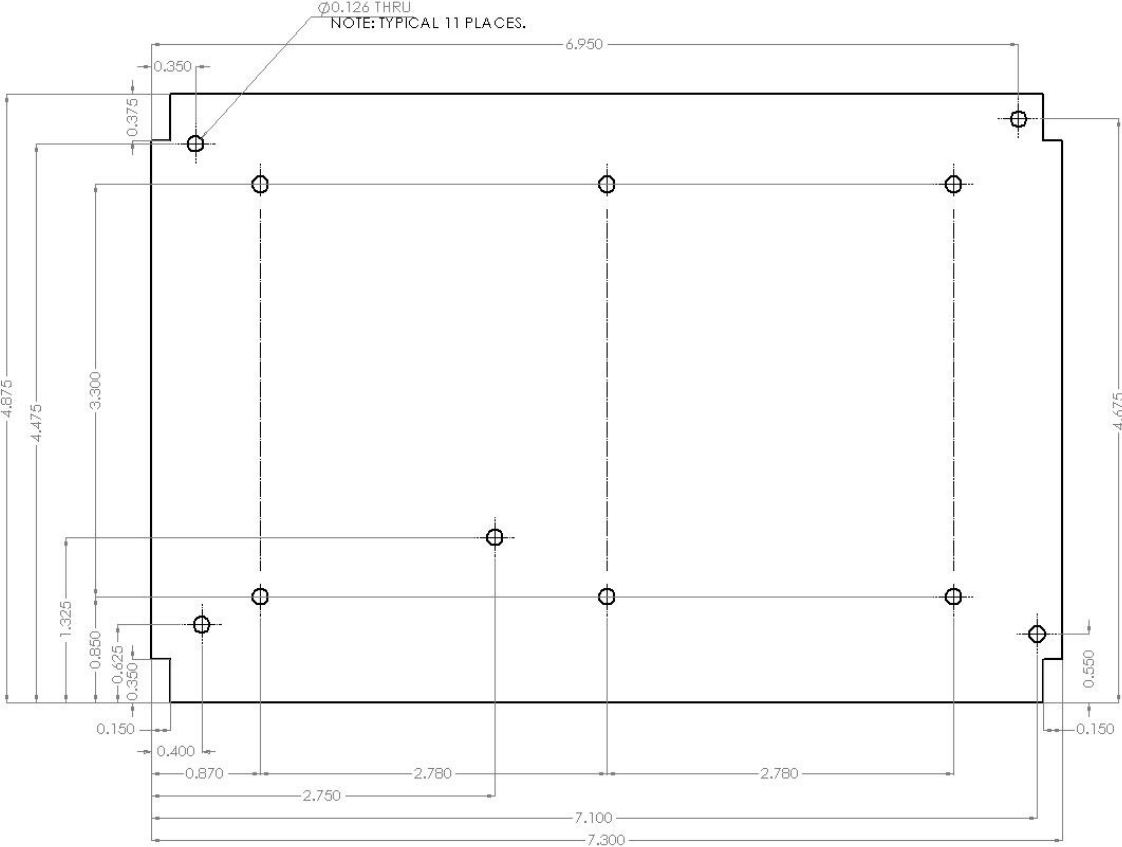
Appendix E – Compliance Notices

Federal Communications Commission Statement

FCC - This equipment has been tested and found to comply with the limits for Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in such case the user will be required to correct the interference at the users expense.

EMC Directive Statement

Products bearing the CE label fulfill the requirements of the EMC directive (89/336/EEC) and of the low-voltage directive (73/23/EEC) issued by the European Commission.

To obey these directives, the following European standards must be met:

EN55022 Class A – "Limits and methods of measurement of radio interference characteristics of information technology equipment"

EN55024 – "Information technology equipment Immunity characteristics Limits and methods of measurement".

EN60950 (IEC950) – "Safety of information technology equipment, including electrical business equipment"

This is a Class A Product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures to prevent or correct the interference.

Always use cabling provided with this product if possible. If no cable is provided or if an alternate cable is required, use high quality shielded cabling to maintain compliance with FCC/EMC directives.

Warranty

Sealevel's commitment to providing the best I/O solutions is reflected in the Lifetime Warranty that is standard on all Sealevel manufactured I/O products. Relio™ industrial computers are warranted for a period of two years and the R9 family is warranted for a five year period from date of purchase. We are able to offer this warranty due to our control of manufacturing quality and the historically high reliability of our products in the field. Sealevel products are designed and manufactured at its Liberty, South Carolina facility, allowing direct control over product development, production, burn-in and testing. Sealevel achieved ISO-9001:2000 certification in 2002.

Warranty Policy

Sealevel Systems, Inc. (hereafter "Sealevel") warrants that the Product shall conform to and perform in accordance with published technical specifications and shall be free of defects in materials and workmanship for the warranty period. In the event of failure, Sealevel will repair or replace the product at Sealevel's sole discretion. Failures resulting from misapplication or misuse of the Product, failure to adhere to any specifications or instructions, or failure resulting from neglect, abuse, accidents, or acts of nature are not covered under this warranty.

Warranty service may be obtained by delivering the Product to Sealevel and providing proof of purchase. Customer agrees to insure the Product or assume the risk of loss or damage in transit, to prepay shipping charges to Sealevel, and to use the original shipping container or equivalent. Warranty is valid only for original purchaser and is not transferable.

This warranty applies to Sealevel manufactured Product. Product purchased through Sealevel but manufactured by a third party will retain the original manufacturer's warranty.

Non-Warranty Repair/Retest

Products returned due to damage or misuse and Products retested with no problem found are subject to repair/retest charges. A purchase order or credit card number and authorization must be provided in order to obtain an RMA (Return Merchandise Authorization) number prior to returning Product.

How to Obtain an RMA (Return Merchandise Authorization)

If you need to return a product for warranty or non-warranty repair, you must first obtain an RMA number. Please contact Sealevel Systems, Inc. Technical Support for assistance:

Available   Monday – Friday, 8:00AM to 5:00PM EST
Phone   864-843-4343
Email   support@sealevel.com

Trademarks

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