EV8 & EV-Writer

User's Guide

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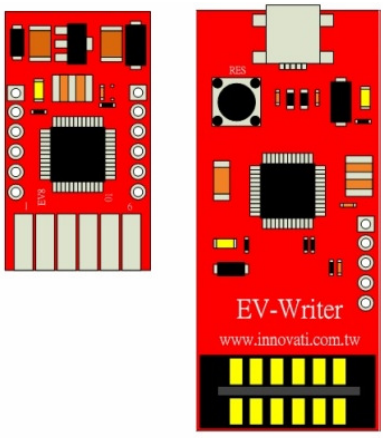

Passion for innovation

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Errata

We hope that our users will find this user's guide a useful, easy to use and interesting publication, as our efforts to do this have been considerable. Additionally, a substantial amount of effort has been put into this user's guide to ensure accuracy and complete and error free content, however it is almost inevitable that certain errors may have remained undetected. As Innovati will continue to improve the accuracy of its user's guide, any detected errors will be published on its website. If you find any errors in the user's guide please contact us via email service@innovati.com.tw. For the most up-to-date information, please visit our web site at http://www.innovati.com.tw.

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Product Overview

Innovati's EV8™ module is the simplified version of BASIC Commander® series. The EV8™ module is developed to support low-cost and low to middle volume micro-controllers applications. EV8™ module has eight general-purpose digital I/Os suitable for less I/O required applications. The EV8™ module is multiple-time programmable, however it is not equipped with the USB interface to download the programs. For that, an EV-Writer™ is required.

The EV8™ module with the EV-Writer™ is basically equivalent to the BASIC Commander® module. However, due to the size consideration, the cmdBUS™ connector is not provided, the EV8™ cannot collaborate with Innovati's Smart Peripheral Modules. To execute the DEBUG commands for human-machine interface, the USB interface is required. The EV8™ module cannot execute the DEBUG commands by itself, unless it is connected to the EV-Writer™.

Note that this manual mainly describes the specification of the EV8™ and EV-Writer™. For the details of the BASIC Commander® system and usage of the innoBASIC™ language, please refer to "BASIC Commander & innoBASIC Workshop User's Manual."

Product Features

- Eight general-purpose digital I/Os
- 200mA regulated 5V output
- 228 bytes Data RAM, 256 bytes EEPROM Data RAM
- 8KWord multiple-time programmable, non-volatile Program Memory (c.a. 800 innoBASIC™ statements)
- InnoBASIC™ Workshop integrated development system
- DEBUG Commands not supported in this version EV8™
- CmdBUS™ smart modules are not supported in this version EV8™
- EV8™ can be reprogrammed via the EV-Writer™ connecting to a PC
- EV8™ Module dimension: 18 mm x 32 mm
- EV-Writer™ dimension: 34 mm x 54.5 mm

Applications

- Student scientific projects

- After-school Robotics/Science class curriculum
- Interactive/Installation Art applications
- Microcontroller applications

Pin Layout

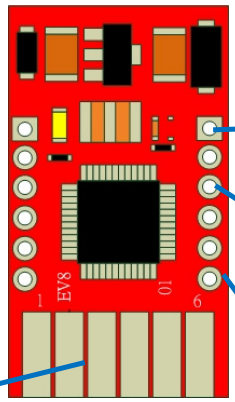

Fig. 1 EV8™ Module

Eight general-purpose digital I/Os labeled P0 through P7 on the board.

Male Download Connector to connect to the EV-Writer. Do not connect anything to those pins.

RESET Button. To restart the program while the program is in execution. Note that it is prohibited to press this button during downloading, which will result in download failure.

Red LED will be lit when power is on.

VIN and GND for 6~12V power input.

N.C. pin has no connection.

Regulated 5V 200mA power output.

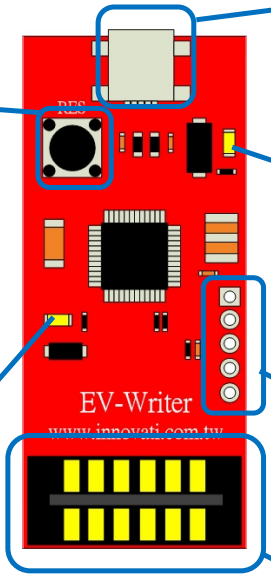

Fig. 2 EV-Writer™

USB Connector for program downloading from a PC.

Green LED will be lit when USB is in communication.

Internal use only. Do not connect anything to those holes.

Female Download Connector for EV8™ insertion.

Download Connection

Each time you want to download the program to the EV8™ module, insert the EV8™ module into the connector on the EV-Writer™ and then connect the EV-Writer™ to your computer via a USB cable as shown in the figure 3. After downloading the program, remove the USB cable and then remove the EV8™ module from the EV-Writer™.

When inserting the EV8™ module into the EV-Writer™ vertically, the component side of the EV8™ should EV-Writer™ uses the USB power for downloading, no extra power is required.

Note that the external power supply in your application should be turned off or disconnected prior to connecting the USB cable to a PC for downloading. Power confliction may cause unpredictable damage to the devices.

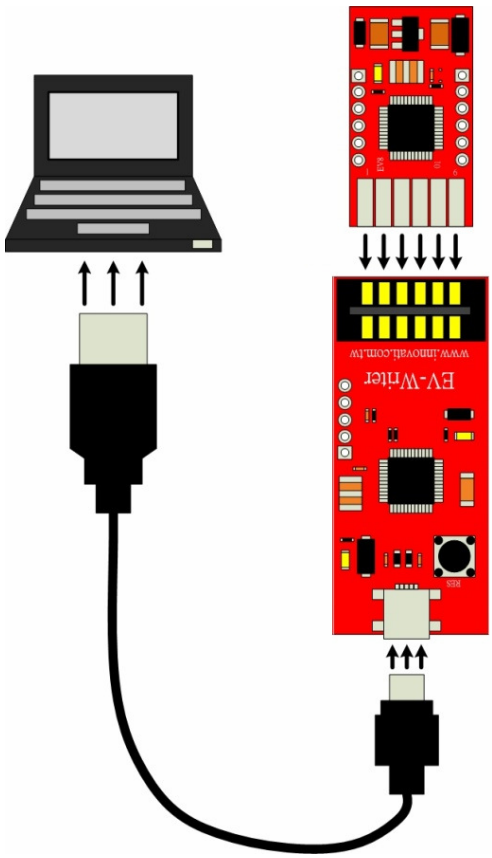

Fig. 3 EV8™ Download Connection

Characteristics

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_{OH}	I/O Output High Voltage	No Load	-	5	-	V
V_{OL}	I/O Output Low Voltage	No Load	-	0	-	V
I_{OL}	I/O Sink Current	V_{LOAD}=0.1V_{OH}	10	20	-	mA
I_{OH}	I/O Source Current	V_{LOAD}=0.9V_{OH}	-5	-10	-	mA

Table 1. DC Characteristics (Ta=25°C)

Absolute Maximum Ratings

Operating Temperature of the Module: 0 °C ~ 70 °C

Storage Temperature of the Module: -50 °C ~ 125°C