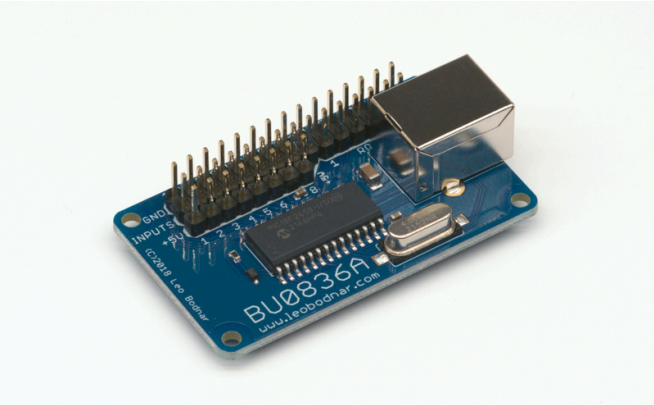
LEO BODNAR ELECTRONICS

LBE-1010

BU0836A Joystick Controller

FEATURES

- 8 Analog Inputs (12 bit)
- 12 Digital Button Inputs
- 8 Way Hat Switch Input
- Encoder Support via Config Utility
- Low Latency
- Driverless Operation
- No Programming Required
- Buttons Expandable to 32 via Matrix
- Robust USB Connection



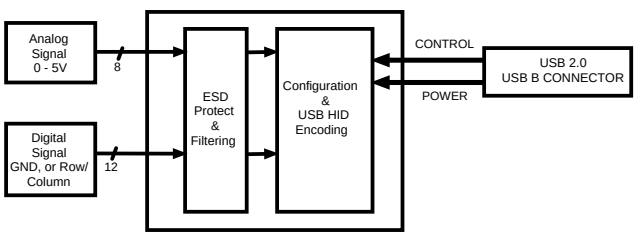
APPLICATIONS

- Custom Flight Simulator Controls
- Racing Simulator Steering Wheels and Pedals
- General-purpose USB Input Devices
- Custom Controller Hardware Interfacing
- Industrial Control Panels

DESCRIPTION

The BU0836A is a compact USB joystick controller board providing 12-bit resolution on all 8 analogue inputs, it includes 32 digital button inputs which can be configure to accept encoder inputs via software. It appears as a standard USB HID joystick device and requires no drivers. The board includes a 5V reference output for sensors and supports direct connection of potentiometers, switches, and other control inputs. Powered entirely from USB, the BU0836A offers a simple, reliable interface for custom simulator controls and general-purpose USB input devices.

BLOCK DIAGRAM



SPECIFICATIONS

POWER	
Voltage	5V via USB
Current	30mA (Board Only)
USB	
Connector	USB B 2.0
Protocol	USB 2.0
Device Type	HID Joystick
ANALOG INPUTS	
Quantity	8
Voltage Range	0-5V
Resolution	12-bit (4096 steps)
DIGITAL INPUTS	
Without Matrix	12 (GND Activation)
With Matrix	32 (Row to Column Activation)
DIMENSIONS	
Size	52x31x12mm
Weight	23g
ENVIRONMENTAL	
Operating Temp	0–50°C
Storage Temp	-20–70°C

HID REPORT STRUCTURE

Number of Analog Inputs = n

Byte Offset	Size	Name	Description
(n-1)*2	16 bits	Axis n	16 bits, LSB 12 bits active
n*2	32 bits	Buttons	1 bit per button
(n*2)+4	8 bits	Hat Switch	0xf = Off, 0x1 = N, 0x2 = NE, 0x3 = E, 0x4 = S, 0x5 = SW, 0x6 = W, 0x7 = NW

Datasheet Version: V1.1 - Added Block Diagram-10-07-2026