

SLICE-CC

Dual-Channel Low-Noise Current Controller

The SLICE-CC is a compact, dual-channel cw current controller for driving diode, interband, and quantum cascade lasers as well as semiconductor optical amplifiers and tapered amplifiers. Part of the Vescent SLICE series of high-performance, economical photonic control electronics, SLICE-CC offers two channels of low-noise current control. Proprietary self-adjusting power supply technology automatically sets the compliance voltage to as high as 12 V - *but no higher than necessary to drive your load* - allowing you to drive a traditional diodes or a quantum cascade lasers with the same device and the same efficiency. The two channels operate independently - including the automatic compliance adjustment so you can drive any combination of loads.



SLICE-CC Current Controller

The SLICE-CC includes all the features you expect from your current controller, including high modulation bandwidth, power leveling, interlocking, and current limiting & diode protection circuits. Not to mention ease of use through a touch screen, PC-based GUI, or an API command set. The proprietary power supply design accepts all standard AC mains voltages and is highly efficient but will not introduce switching noise.

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2.1.1 coding: utf-8 --
Created on Wed Jul 26 09:28:02 2012
Author: Bob Levy

import serial
from time import sleep

# Master class for handling ID and GP functions across boards
class SLICE(object):
    def __init__(self, port):
        self.ser = serial.Serial(port, 115200, timeout=1)
        self.ser.flush()

    def __del__(self):
        self.ser.close()

    def __str__(self):
        return self.ser.name

    def __repr__(self):
        return self.__str__()

    def __enter__(self):
        self.ser.open()

    def __exit__(self, exc_type, exc_value, traceback):
        self.ser.close()

    def __call__(self, cmd):
        self.ser.write(cmd)
        return self.ser.read(1024)

    def __getitem__(self, item):
        return self.__call__(item)

    def __setitem__(self, item, value):
        self.__call__(item + '=' + value)

    def __delitem__(self, item):
        self.__call__(item + '=')

    def __contains__(self, item):
        return item in self.__call__('?')

    def __len__(self):
        return len(self.__call__('?'))

    def __iter__(self):
        return iter(self.__call__('?'))

    def __getitem__(self, item):
        return self.__call__(item)

    def __setitem__(self, item, value):
        self.__call__(item + '=' + value)

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```

Control SLICE through the front panel, a GUI, or serial commands



Features:

- 2 independent current sources
- Self adjusting compliance voltage to 12 V
 - Drive traditional & GaN diodes, interband & quantum cascade lasers
- Low noise
- Power Leveling
- Soft start protects load from surging

Applications:

- Diode lasers, tapered amplifiers, SOAs
- Interband and quantum cascade lasers
- Coils

SLICE-CC Performance Specifications

Performance					Units
Channels	2				
Current Maximum ¹	200	500	1,000	2,000	mA
Maximum Noise ²	1.5	4	10	15	μA
Current Set Point Resolution	0.01	0.02	0.05	0.1	mA
Maximum Compliance Voltage ³	12				V
Modulation Bandwidth	>1				MHz
Operation Modes	Constant Current or Constant Power				
Power Fluctuations ⁴	0.1				%, rms
Current Accuracy	100				μA
Drift	<25				μA/°C
Constant Power Mode					
Input	±5 mA photodiode signal				
Transimpedance Amp	Yes				
Interface					
Control	Front-panel touch screen, PC-based GUI, API				
Connections	Host control: USB Type B				
Power Input	100 - 240 VAC; 50, 60 Hz				

All specifications subject to change without notice.

¹Depends on model choice

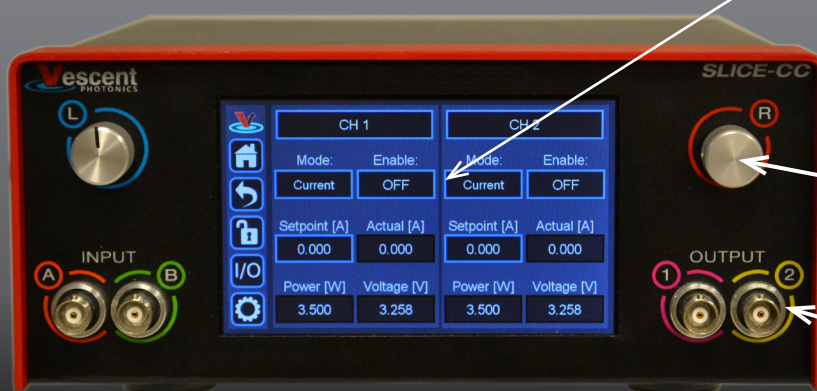
²RMS integrated over 10 Hz to 1 MHz

³Automatically adjusts to your load requirements

⁴In constant power mode; fluctuation of monitor photodiode current

SLICE-CC Current Controller

Touch screen for easy set up and control



Rotary knob interface allows fast, precise value entry

User-assignable front-panel I/O for monitor and interlocking

Vescent Photonics, Inc.
6770 W. 52nd Ave., Suite B
Arvada, CO 80002
USA
+1 (303) 296-6766
www.vescent.com

