

SLICE-DCC

Dual-Channel Low-Noise Current Controller

A SLICE of our Integrated Control Electronics Line, the SLICE-DCC is a compact, dual-channel cw current controller for driving diode, interband, and quantum cascade lasers as well as semiconductor optical amplifiers, tapered amplifiers, and pump lasers. Part of the Vescent SLICE series of high-performance, economical photonic control electronics, SLICE-DCC 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-DCC Current Controller

The SLICE-DCC 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 29 10:01:00 2015
Author: Bob Levy

import serial
from serial import *

Master class for handling IP and GP functions across boards
def __init__(self, ipaddress):
    self.ipaddress = ipaddress
    self.serialdevice = None

def __del__(self):
    self.close()

def __str__(self):
    return self.ipaddress

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

def __enter__(self):
    self.open()

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

def open(self):
    self.serialdevice = serial.Serial(ipaddress=self.ipaddress,
                                     port='/dev/ttyUSB0',
                                     baudrate=115200)

def close(self):
    self.serialdevice.close()

def send(self, data):
    self.serialdevice.write(data)

def receive(self):
    return self.serialdevice.read(1024)

def read(self):
    return self.receive()

def write(self, data):
    self.send(data)

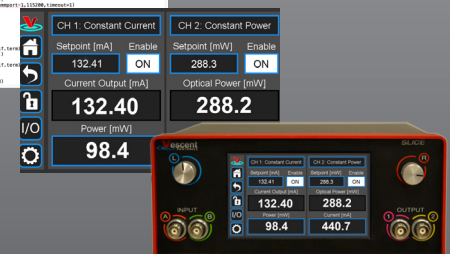
def readwrite(self, data):
    return self.read() + self.write(data)

def readwritehex(self, data):
    return self.readhex() + self.writehex(data)

def readhex(self):
    return self.read().hex()

def writehex(self, data):
    self.write(data.hex())
```

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
- Pump diodes
- Coils

SLICE-DCC 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	Integrated				
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

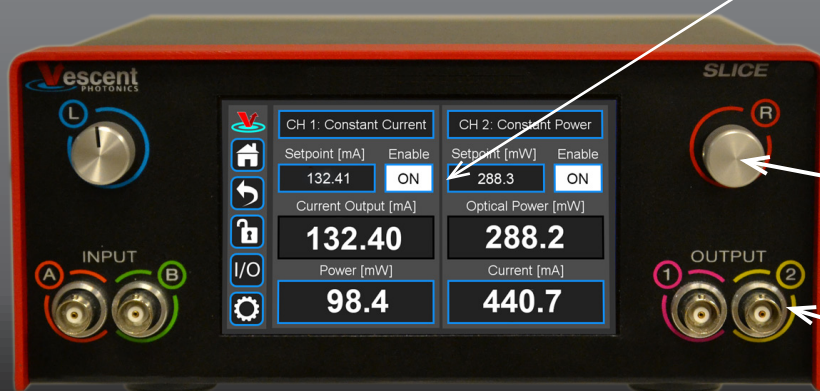
²RMS integrated over 10 Hz to 1 MHz

³Automatically adjusts to your load requirements

⁴In constant power mode; fluctuation of monitor photodiode current

SLICE-DCC 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

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