

Servo Controller

Model No. ICE-SC1

Document Revision: 1.0

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Please read [Limited Warranty](#) and [General Warnings and Cautions](#) prior to operating the ICE-SC1.

Description

General purpose Servo Controller with PI²D loop filter. Secondary auxiliary output is pure integrator of primary output. Both primary output and aux output have min / max settings and adjustable offset. This product is currently in development and all specifications subject to change.

Absolute Maximum Ratings

Note: All modules designed to be operated in laboratory environment

Parameter	Rating
Environmental Temperature	>15°C and <30°C
Environmental Humidity	<60%
Environmental Dew Points	<15°C

Specifications

	ICE-SC1	Units
Peak Lock Servo		
<html> </html>Bandwidth ¹⁾	3	MHz
<html> </html>Input Impedance	50	Ω
<html> </html>Dither Frequency	4	MHz
<html> </html>Phase Shift Resolution	5.6	deg
<html> </html>Input Voltage Noise ²⁾	TBD	nV/ <HTML>√Hz</HTML>
Loop Filter Parameters		
<html> </html>Proportional Gain (ref to DC Error)	-38 to +30	dB
<html> </html>Proportional Gain Resolution	2	dB

		ICE-SC1	Units	
Peak Lock Servo				
<html> </html>First Integrator		0.030 - 175	kHz	
<html> </html>Second Integrator		0.30 - 1,750	kHz	
<html> </html>Differential		0.1 - 10,000	kHz	
<html> </html>Differential Gain		18	dB	
Electrical Specifications				
	Min	Typical	Max	Units
5V_A Current Draw		N/A		A
5V_D Current Draw		70		mA
+15V Current Draw ³⁾ (Sidelock)		160	200	mA
-15V Current Draw ⁴⁾ (Sidelock)		120	150	mA

I/O (ICE-BOX)



Only when purchased with the ICE-Box.

The Front Panel for the ICE-SC1 has three SMA connectors. Top: Error In; Middle: Aux Out; Bottom: Primary Out.

Error In

SMA input for the error signal.

Aux Out

SMA output for the Auxiliary servo.

Servo Out

SMA output for the Primary servo.

¹⁾

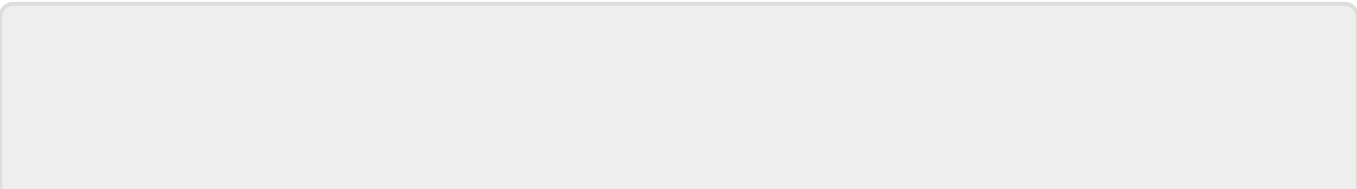
Calculated based on RF dither frequency of 4 MHz which limits servo bandwidth

²⁾

Referenced to 50Ω load

³⁾ ⁴⁾

Current draw depends on output load, assuming high impedance. Current may be initially high on power-on



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