

FEATURES

- Adjusts Standard *Rejutors*
- Labview based *Rejust-it* software
- Microbridge patented *Rejutor* algorithm
- Plug-and-Play USB interface
- Co-adjustment of two *Rejutors* in dual or divider configuration
- Able to adjust 1KΩ to 100KΩ *Rejutors*

APPLICATIONS

- Precise adjustment of Microbridge Technologies MBD family of *Rejutors*
- Single *Rejutor* resistance adjustment
- Stand-alone bridge resistance adjustment
- Functional in-circuit adjustment
 - Differential voltage adjustment mode
 - Target voltage adjustment mode

KIT CONTENTS

- MBK-408A *Rejutor* Calibration Tool
- Transformer (Multi-region 18VDC)
- Entry-Level *Rejust-it* Software (on CD)
- User Manual (on CD)
- 26-Pin Mating Connector
- USB Interface Cable
- Self-test Connector

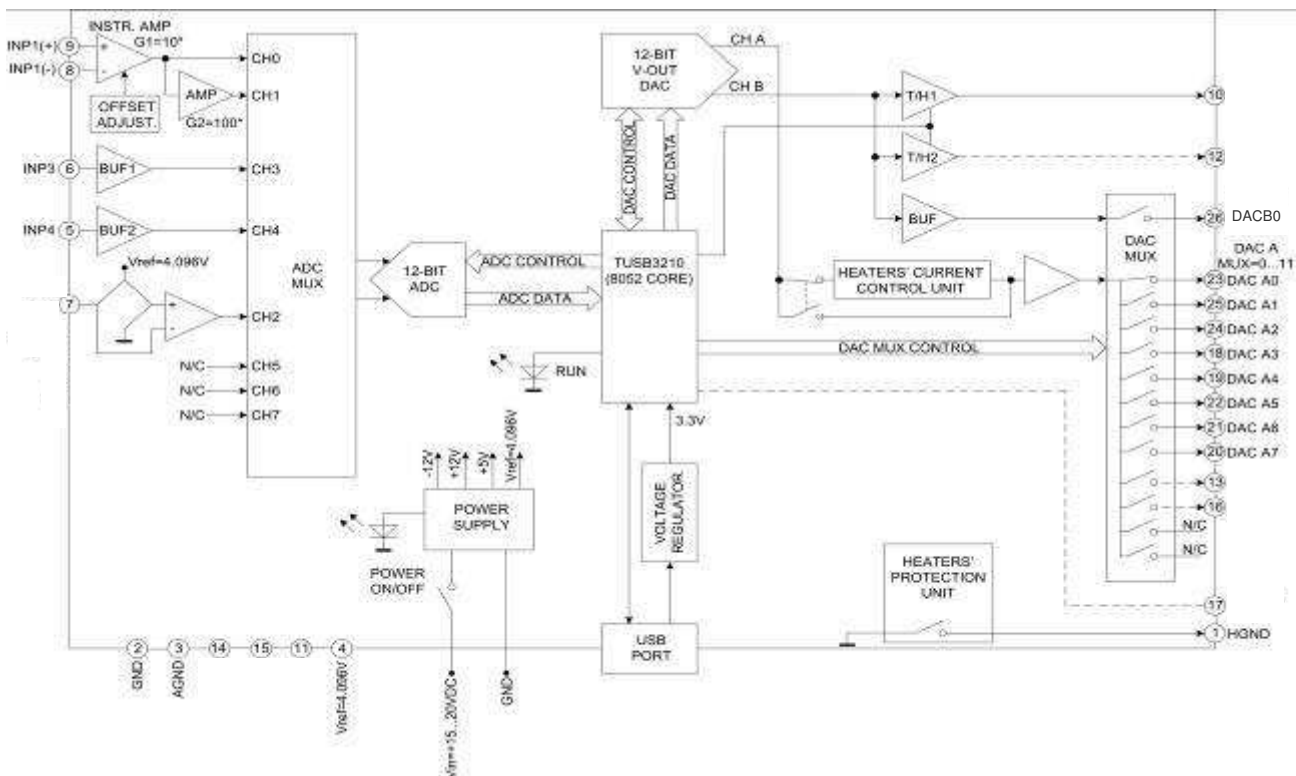
FUNCTIONAL BLOCK DIAGRAM


Figure 1: Functional Block Diagram

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GENERAL OVERVIEW

The Microbridge Technologies MBK-408A Rejistor Calibration Kit provides the interface between *Rejutors* and *Rejst-it* software. The kit measures the dependent variable (voltage) using a 12-bit ADC and adjusts the *Rejistor*(s) with 12-bit DAC under user control. The basic kit provides the tools to start in-circuit *Rejistor* adjustment.

The *Rejst-it* Graphical User Interface (GUI) provides an editor for user-specific applications:

- Connection configuration for ADC, DAC
- Type of *Rejistor*
- Descriptions of (monotonic) variation of circuit output as a function of resistance, for each *Rejistor*

MBK-408A Functionality

Hardware	Software	Functionality
12-bit A-to-D Converters	±10 V Full Scale, 5 mV per bit	Measure circuit outputs
Differential, Instrument Grade Amplifier (IN+ - IN-)	48x Gain → CH0: U1	Coarse Differential Measurements
	576x Gain → CH1: U2	Fine Differential Measurements
2 Single-Ended Analog Inputs, ±10 V Max	CH3: U3	Target Value Measurements
	CH4: U4, 4x Gain	
12-bit D-to-A Converter	4.096 V Full Scale, 1 mV per bit	Drive pulse stream to program <i>Rejutors</i>
9 Analog Heater Outputs 3 x Gain	DACA0	Output connections to <i>Rejistor</i> Auxiliary pins
	DACA1	
	DACA2	
	DACA3	
	DACA4	
	DACA5	
	DACA6	
	DACA7	
	DACB0	High-current output driver
Plug-and-Play USB Interface	Interface to Host Computer	Control MBK-408A <i>Rejistor</i> Calibration Tool

PIN FUNCTIONAL DESCRIPTION

26-Pin D-Sub Male *Rejistor* Interface Connector

Pin	Pin Name	Direction	Function	Notes
1	HGND	Output	Ground for Heater Voltage	Contains in-circuit fault protection
2	GND	Output	Digital Ground (must be connected to local ground)	
3	AGND	Output	Analog Ground (reference for A-to-D Converters)	
4	NC1	-	No connect	
5	INP4	Input	Analog input #4	Single-ended input ±10V max, 4x Gain
6	INP3	Input	Analog input #3	Single-ended input ±10V max
7	NC2	-	No connect	
8	INP1-	Input	Analog input #1	Differential Pair – inverted I/P, ±10V max
9	INP1+	Input	Analog input #0	
10	NC3	-	No connect	
11	NC4	-	No connect	
12	NC5	-	No connect	
13	NC6	-	No connect	
14	NC7	-	No connect	
15	NC8	-	No connect	
16	NC9	-	No connect	
17	NC10	-	No connect	
18	A3	Output	Analog Output #3	12V, 20mA Max.
19	A4	Output	Analog Output #4	12V, 20mA Max.
20	A7	Output	Analog Output #7	12V, 20mA Max.
21	A6	Output	Analog Output #6	12V, 20mA Max.
22	A5	Output	Analog Output #5	12V, 20mA Max.
23	A0	Output	Analog Output #0	12V, 20mA Max.
24	A2	Output	Analog Output #3	12V, 20mA Max.
25	A1	Output	Analog Output #1	12V, 20mA Max.
26	B0	Output	Analog Output #12	12V, 200mA Max.

MINIMUM CONFIGURATION

Rejust-it executable software runs on Windows XP. A self-configuring USB port is required to communicate between the host computer and the MBK-408A.

REJUSTOR CALIBRATION CAPABILITY

The MBK-408-Axx Rejustor Calibration Kit is controlled using *Rejust-it* executable code on the host computer.

In-Circuit Calibration

The MBK-408A can be connected to the application circuit for in-circuit calibration. The two modes, below, allow adjustment of the *Rejustor(s)* to meet a target output requirement. The target output (voltage, current, frequency, etc) must be converted to a voltage to be measured by the analog inputs on the MBK-408A. *Rejust-it* software adjusts the *Rejustor* for a specific application where the transfer function between the value of the *Rejustor* and the output is known. *Rejustors* can be adjusted to generate a target voltage, or to a differential voltage.

Target Voltage Calibration Mode

Target value calibration provides the capability to adjust a *Rejustor* to achieve a target output voltage. This mode can be used to calibrate voltage references, voltage regulators or other devices with a target value. For example an LM235 precision temperature sensor can be calibrated to 2.9315V at room temperature. Target voltage calibration can be used with single or dual discrete *Rejustors* or divider *Rejustors* (MBD family).

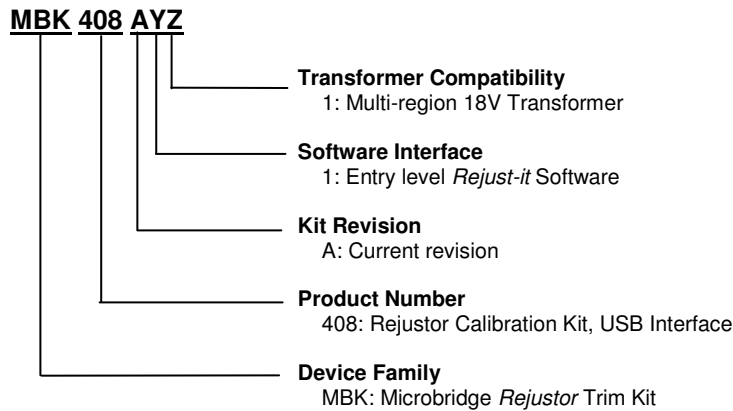
Differential Voltage Calibration Mode

Differential voltage is used to null an offset and requires a reference input voltage. This function uses the differential inputs on the Calibration Tool (Pins 8 and 9) to adjust the *Rejustors* to reduce an offset or balance a bridge to zero. Differential voltage calibration can be used with single or dual discrete *Rejustors* or divider *Rejustors* (MBD family).

Custom Software Interface

MBK-408-Axx customized development tools and software solutions can be configured by Microbridge for custom applications. Contact Microbridge Technologies Inc., for more information.

PRODUCT DESIGNATION



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