

Technical Note

Tap Balance Adjustment

Tap Balance Adjustment Method:

Tap balance - the assurance of equal video levels from multiple readout “taps” on an image sensor - is adjusted at the JAI factory. However, occasionally taps become unbalanced, such as when a user changes the balance manually, or a firmware change affects the balance. In this case, the user can execute a tap balance adjustment.

This document clarifies the method for tap balance adjustment.

The following description uses the BM-500GE as an example. For other cameras, you can find similar menus and apply similar methods.

1. Preparation:

Take a plain and colorless target, such as a white or light gray card or piece of paper, and illuminate it with flat (diffuse) lighting. Point the camera at it and start continuous capturing. Make sure the target object completely fills the camera’s field of view.

2. Automatic Adjustment Method:

This is the recommended method of tap balance adjustment.

1) Unbalanced status:

Here is an example of the two taps being out of balance. Brightness of left and right looks different.

(This is an extreme example.)



Fig. 1: Unbalanced tap example



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2) Gain Auto Balance Once:

Select “Gain Auto Balance Once” menu and click the black triangle button on the right side of the menu.

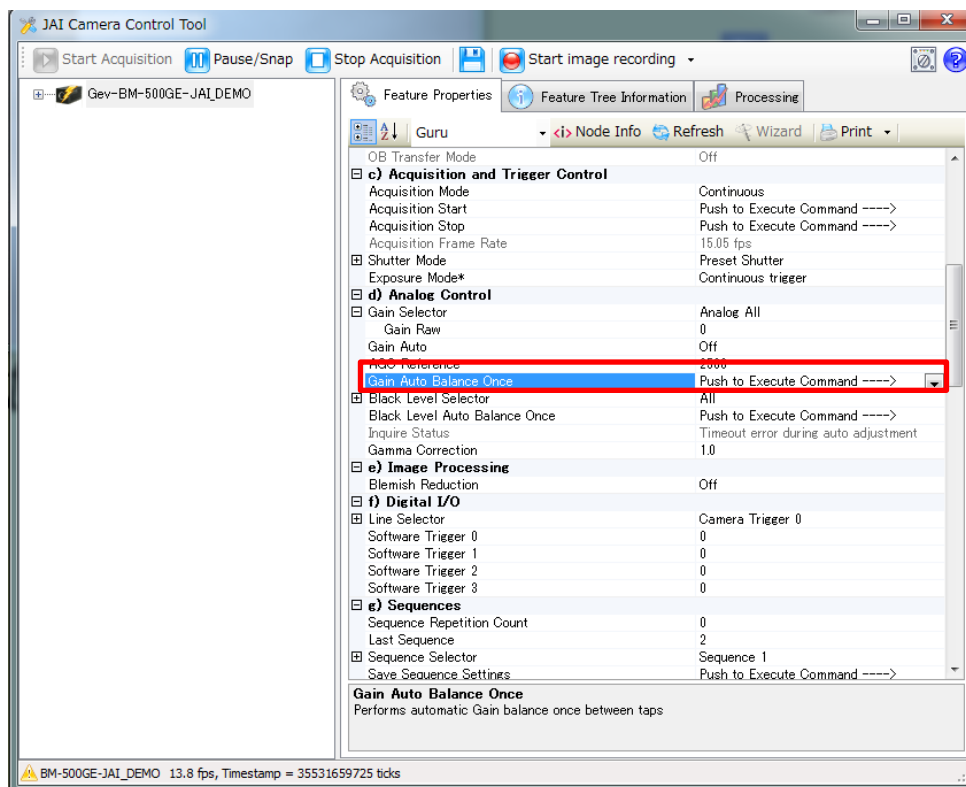


Fig. 2: Gain Auto Balance Once

The following popup window will appear.



Fig. 3: Popup Window of Gain Auto Balance Once

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By clicking on the popup window, Tap Balance Adjustment starts automatically.

After a couple of seconds, the tap balance is adjusted as follows:



Fig. 4: Balanced tap example

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3. Manual Adjustment Method:

While the automatic adjustment method is recommended, in some cases the user might want (or need) to adjust the tap balance manually.

1) Analog Fine Tap 2:

Select “Analog Fine Tap 2” in the “Gain Selector” menu.

2) Set Gain Raw:

While monitoring the live captured image, enter values into the “Gain Raw” field.

By changing the “Gain Raw” value, the brightness of the right side of the image is changed.

Try to find an appropriate value which balances the brightness of the right and left sides.

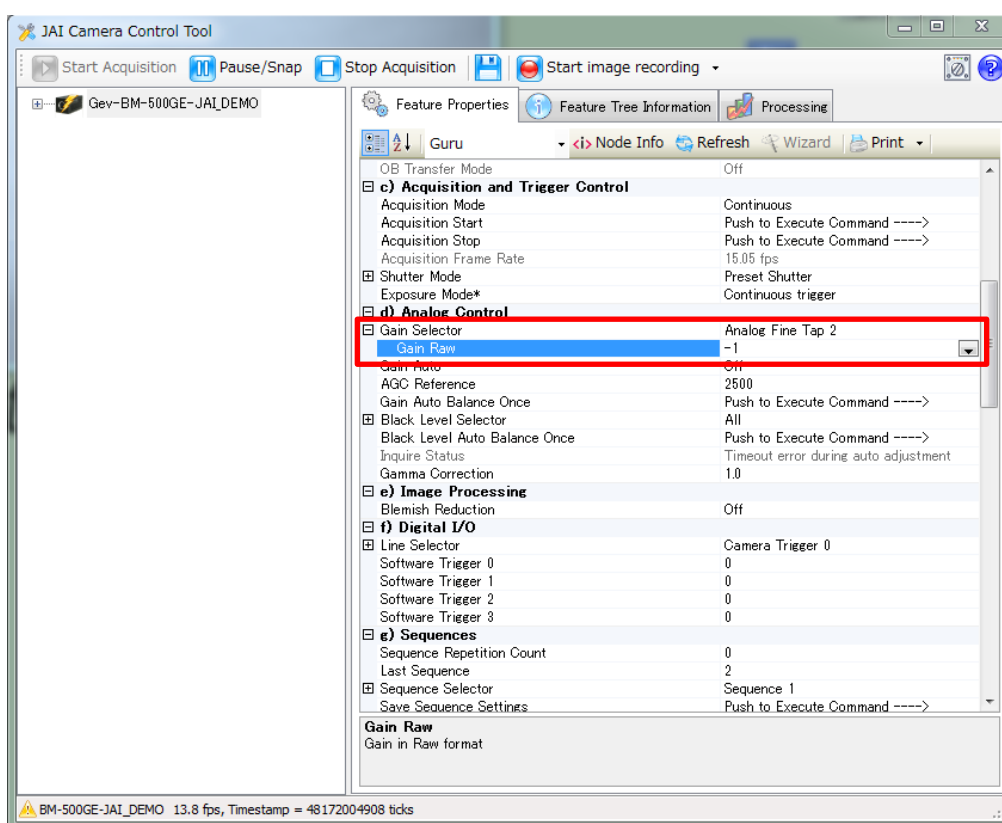


Fig. 5: Manual Adjustment Method

End.