

## Technical Service Bulletin 030525

### Adjustment of IOT Bias Voltage and Idle Current

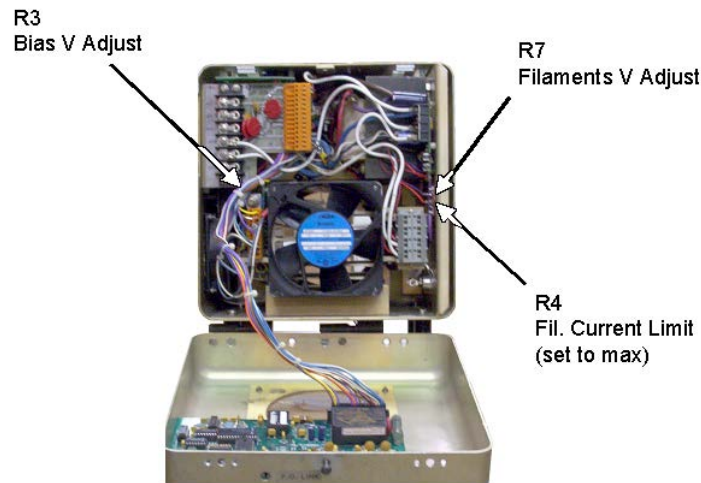
Procedure 030525a: Adjustment of IOT Bias Voltage and Idle Current	
Applicability	All IOX and DCX transmitters.
Prerequisites	Correct IOT filament voltage (030524), Correct IOT beam voltage (030611). HPA in Beam Mode with IOT connected to high voltage. RF drive extinguished.
Equipment Required	None.
Comments	Type 405343-03 Filament / Bias / Ion Supply

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**NOTE:** The bias voltage / idle current setting has a profound impact on IOT transfer curve linearity. If the transmitter shows signs of poor linearity and/or intermodulation performance, first verify that the idle current is at the correct level before attempting any readjustment of the exciter precorrection circuits. Consult Service Bulletin 030602 for more information on exciter precorrection circuits and transmitter intermodulation performance.

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1. Observe idle current on beam current meter. Idle current is the resting (or quiescent) beam current that remains when RF drive is extinguished.
2. Press **HPA START MODE** button on HPA control panel to extinguish high voltage.
3. Allow high voltage to fall to zero.
4. Gain access to high voltage compartment via key interlock system.
5. Discharge all high voltage circuits with grounding stick.
6. Open cover of filament / bias / ion supply.
7. Turn potentiometer R3 of bias supply clockwise to lower bias voltage and increase idle current. Turn potentiometer R3 counterclockwise to raise bias voltage and lower idle current. A change of 5V in bias voltage typically corresponds to change in idle current of approximately 200mA.



8. Close cover of filament / bias / ion supply.
9. Close high voltage compartment and return interlock keys to proper positions.
10. Press **BEAM MODE** button on HPA control panel to activate high voltage.
11. Observe the idle current on the beam current meter. If the idle is too high or too low, repeat steps 1 through 10 and adjust bias voltage accordingly. A typical idle current level is 500mA to 700mA. Consult original readings from transmitter proof of performance for exact desired idle current level.
12. Procedure complete.

<b>Procedure 030525b: Adjustment of IOT Bias Voltage, Millennium</b>	
Applicability	All IOX and DCX transmitters.
Prerequisites	Correct IOT filament voltage (030524), Correct IOT beam voltage (030611). HPA in Beam Mode with IOT connected to high voltage. RF drive extinguished.
Equipment Required	None.
Comments	Type 46745360 Filament / Bias / Ion Supply (millennium)

1. Observe idle current on beam current meter. Idle current is the resting (or quiescent) beam current that remains when RF drive is extinguished.
1. Access bias voltage adjustment menu by issuing following commands via HPA control panel: **Information Access > Adjustments > Filament, Bias, Ion > Bias Voltage**

2. Use **Up** and **Down** menu options to change bias voltage level until satisfactory idle current level is observed on beam current meter. A typical idle current level is 500mA to 700mA. Consult original readings from transmitter proof of performance for exact desired idle current level.
3. Press **Save** button to save bias voltage adjust and return to previous menu.
4. Procedure complete.

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