QUICKSTART GUIDE

Thank you for using our equipment. This is a guide to help you set up your T&C Complete RF Power Delivery System, consisting of an AG Series Generator and an AIT-600 Tuner.

Please identify the following accessories in your package to get started:

- Small coax RF cable (RG-400)
- Large coax RF cable (RG-393)
- DB-15 cable (15-pin)
- DB-25 cable (25-pin)

CONNECTING THE DEVICES

GENERATOR RF OUTPUT ⟶ TUNER RF INPUT

Locate the smaller diameter coax RF cable (RG-400) that you received in your package, typically terminated with N connectors. Connect one end to the Generator's **RF Output**, and the other to the **RF Input** of the AIT-600-XX Tuner.

TUNER RF OUTPUT ⟶ APPLICATION INPUT

Locate the large diameter coax RF cable (RG-393) typically terminated with HN connectors. Connect one end to the **RF Output** of the AIT-600-XX. The other end goes to your application. Your application must have a corresponding HN type female connector to connect to the large coax RF connector.

COMMUNICATION CABLE

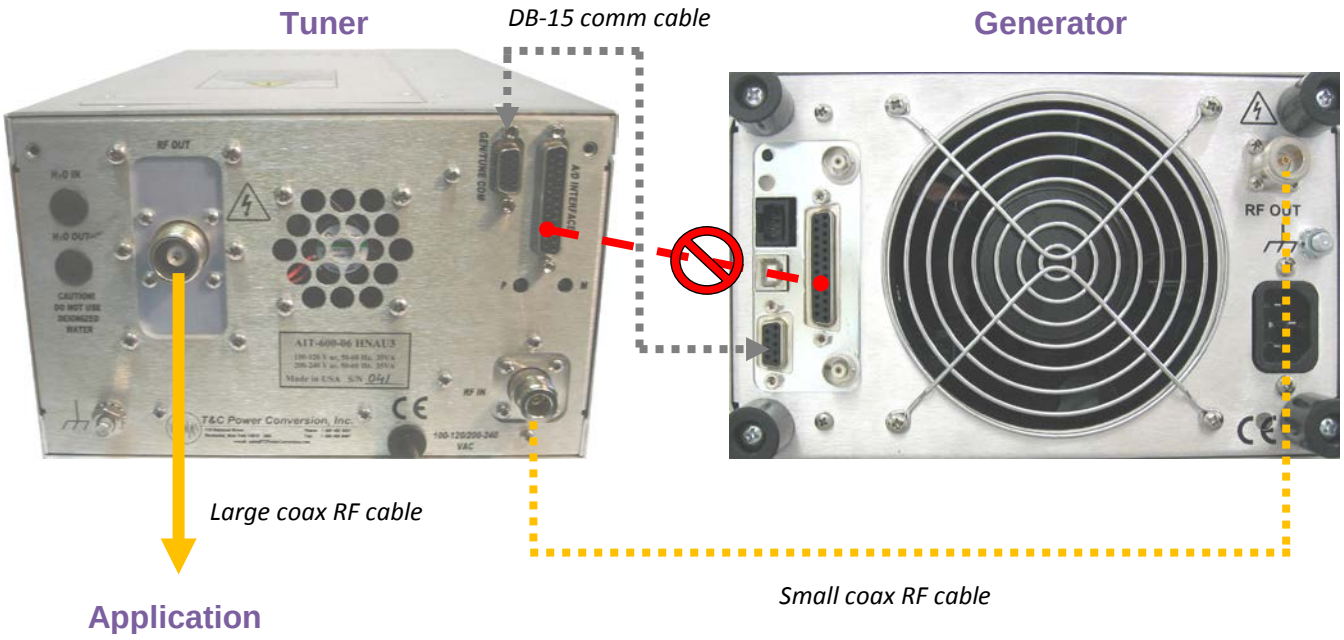
The DB-15 ports (GEN/TUNE) on each device are the only connection these two devices share.

The **DB-15 cable** (light gray) is intended for generator and tuner communication (GEN/TUNE). Each end of this cable goes in the respective 15-pin port on the back panel of both devices. Note that when this connection is made, an alternate screen is displayed on the generator known as the Tuner mode screen described thoroughly in the manual.

DO NOT CONNECT the Generator's A/D Interface (DB-25) to the Tuner's A/D Interface (DB-25). The DB-25 (dark gray) cable included in your package may appear to complement these two ports but DO NOT make this connection in any way. This will create a malfunction in both devices. These ports are designated for external control of the individual unit.

The **DB-25 cable** (dark gray) is for connection of either A/D Interface on your AG xx13 or AIT-600-XX. It is for your use with your own controller if you want to set device parameters remotely of either generator or tuner. Please review each product's manual for a description of the signals on their DB-25 interfaces. Please consult a test/interface engineer if possible in order to help you set up this external operation of either device.

DIAGRAM



PLEASE NOTE

- ✓ Grounding and connections in RF are extremely important.
- ✓ Verify your generator and tuner are installed in an instrumentation rack and are properly grounded by heavy-duty ground wires to the back of each unit's grounding screw.
- ✓ Verify RF cables are separated from each other. One goes from generator to tuner and one goes from tuner to application. They cannot be tangled.
- ✓ Verify all other cables (AC, communication, etc.) are not tangled with RF cables.

OPERATION

It is highly recommended that you connect your RF generator to a standard RF dummy load of 50 Ohms before connecting to your application. This way you may freely experiment with and understand the functionality of the generator before you enter circumstances that will not be ideal.

Successfully operating the AIT-600-XX Tuner is not as intuitive as the generator. We recommend consulting an experienced technician or engineer before getting started if you have no prior experience with matching applications.

If you continue to proceed with operation without assistance, our suggestions are:

- Always set the tuner positions of the Tune and Load capacitors in the impedance "center", approx. 50% for Load and 40% for Tune. This is done in the **Manual Mode** of the tuner, controlled either from the generator or the tuner's front panel.

- After setting it to "50% / 40%", switch operation of the tuner into **AUTO Mode**.

- Start your process with all RF cables connected as described above. Verify you are in AUTO mode. *Slowly* increase the power. Tuner should sense the thresholds from about 10% of its nominal power, approx. ~ 80W to 100W. In this range the tuner will be triggered to look for an optimal tuning point.

- Some application loads have trouble tuning in AUTO mode**. If the unit cannot tune in AUTO**, switch the tuner into MANUAL Mode and tune by adjusting the TUNE cap first and then the LOAD cap in small iterative steps. Continue adjusting manually for the best tuning position that minimizes the REV power level on your generator display. After this you can switch back into AUTO. Record your positions and you can even save these values as a preset in the generator for a quick recall in the future (see manual).

- If your tuner gets lost in AUTO Mode, switch it to MANUAL Mode and move back to impedance "center" or whatever the good tuning positions you noted before.

TAKE TIME TO EXPERIMENT

Finding the optimal tuning positions for your application is a patient process that takes time in order to achieve the best performance. Unfortunately every application varies and there is no magic bullet or shortcut, therefore taking the time to experiment, observe, and taking notes will allow you to work faster and more effectively in the future. Your ultimate goal is to minimize reflected power and maximize load power, as displayed accurately on the generator's front panel. This way the generator delivers optimal power level to your application with support of the tuner.

If have any questions, please support them with pictures of your setup, and we will do our best to familiarize ourselves with your situation and provide our best suggestions.

T&C Power Conversion Support Team

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GENERATOR FRONT PANEL LEGEND

1) STATUS Panel. Status Indicators are ON when limits are met, Interlock, AC.

2) AC POWER Switch

3) RF OUTPUT Switch. Selection of RF Power ON or OFF

4) TUNER Switch. Selection of either Load Capacitor or Tune Capacitor position in Manual Operation

5) LEVELING Switch. Selection of either FP (Forward Power) of LP (Load Power)

6) SOURCE Switch. Selection of either Internal Oscillator Drive or External Drive Source

7) MAIN CONTROL DISPLAY

8) EDITOR Knob. Button/rotary encoder that allows user to click and scroll through the controller fields/settings.

Typically, scrolling selects field or toggles through values. Clicking activates field or selects value.

MAIN CONTROL SCREEN

TUNER PRESETS SCREEN

SERVICE CONTROL SCREEN

9) Main or Service toggle field. Click/scroll Editor to navigate.

10) Local or Remote Operation. Click/scroll Editor to navigate.

11) Tune mode selections: Automatic (A) or Manual (M) operation. Click/scroll Editor to navigate. In Manual mode, "Load" and "Tune" capacitor positions are enabled for editing.

12) Set Forward Power. Click/scroll Editor to dial power.

13) Live Readout Section

14) Tuner Presets. Hold Editor Knob 1.5 seconds from any screen to enable. Click/scroll Editor to navigate store and recall functions.

15) – 19) Set values by scrolling to the desired field and clicking the Editor. Scroll to adjust value, then click again to save selection.

15) Set Forward Power Limit

16) Set Scale. 5V or 10V = 600W

17) Set Start Power

18) Ramp ON/OFF. Yes=ON, NO=OFF

19) Set Ramp Timing (watts per second)