

RESETTING THE JUMA TRX-2 AND PA-100D

This note discusses the emergency reset feature of both the Juma TRX-2 transceiver, and its companion PA-100D linear amplifier.

Over the last 4 years it has been brought to my attention that there have been some (very rare) instances of the transceiver or amplifier's calibration and/or configuration data becoming corrupted during normal operation. These events have almost always been preceded by a severe mains transient.

Unfortunately nearly all microprocessor controlled devices are susceptible to this to some degree. The mains transient can be propagated through a power supply, particularly a switch-mode device, and cause the supply voltage to momentarily drop below the nominal operating voltage of the microprocessor, triggering a reset. For the reset to be effective, it must last for a certain minimum time to allow all the devices connected to it to return to a defined state, but in many cases this spurious reset is of a very short duration, which fails to properly restore the hardware with unpredictable results.

The symptoms may manifest themselves as little more than a minor screen blink, to completely unresponsive front panel controls, bizarre LCD displays, or trap error messages. The real cure is to ensure that the transceiver's power supply is connected to a mains bus that is not also supplying heavy-duty loads such as air compressors, air conditioning units, large refrigerators etc. Some users have resolved the problem by using a 12V sealed lead-acid battery fed from an intelligent charger.

Linear power supplies seem less affected, probably because the main filter capacitor(s) is/are large enough to smooth out the transient by supplying power to the regulator even when several mains cycles are missing, especially if the supply is generously rated for the actual service. For example, a 13.8V/20A linear supply would be able to power the transceiver in the receive mode for several seconds of mains outage. It is however emphasised that this phenomena is very rare, only about 4 instances have ever been reported to me.

Nevertheless, if the transceiver or linear amplifier should suffer such an event, then the corrupted RAM data may well have been written to the EEPROM such that even when the transceiver or amplifier is powered off and then powered back on its operation or calibration is still affected.

In order to completely reset the transceiver or amplifier to its original state you will need to restore the default settings, and this procedure is built-into my firmware modifications as well as the original firmware.

It is good practice to make a note of your calibration and configuration data so that it can be restored in the event of a reset becoming necessary, and the User Manuals of both the transceiver and the amplifier have pages already prepared for this.

Transceiver Reset

From the OFF state, press and hold the MODE button, and power the transceiver up. Continue to hold the MODE button until the message:

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Reset Defaults?  
PWR=No  Mode=Yes
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is displayed. Release the MODE button, and then briefly press the MODE button to restore the default calibration and configuration data. The LCD will briefly display:

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Reset Defaults?  
Saved!
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The transceiver will then drop into its normal boot-up mode. Power the transceiver off, and then press and hold the PWR button until the message:

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Calibration  
Mode v1.20a
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is displayed. Release the PWR button, whereupon the first page of the System Calibration & Setup menu will be displayed.

Re-enter the master oscillator calibration data, and using the DISPLAY/CONFIG button step to the next page and re-enter the voltmeter calibration. Continue to restore all the previous calibration data.

If you wish to quickly select a calibration page, press and hold the MODE button. A low tone will sound, and using the VFO knob, select the desired calibration page, then release the MODE button and adjust the calibration parameter with the VFO knob.

Note that with the default settings, the Fast Page Select feature defaults to the Press & Hold mode. If you prefer the Latched mode, then select this calibration page and reset the mode to Latched. In this mode, to rapidly select a page press and hold the MODE button until you hear a series of soft beeps. Release the MODE button and use the VFO knob to select the desired page.

To exit from the Latched mode, briefly press either the MODE or the PWR button, and then adjust the parameter in the usual way.

Once all the calibration data has been restored, press and hold the DISPLAY/CONFIG button until the following message is displayed:

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Save Settings?  
PWR=No  MODE=Yes
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and briefly press the MODE button to save the new data. The transceiver will exit to the normal mode of operation. Press and hold the DISPLAY/CONFIG button until the message:

User
Configuration

is displayed, and then release the button. The first page of the User Configuration menu will be displayed. Re-enter your configuration data. The Fast Page Select feature is also available in this mode. Finally, press and hold the DISPLAY/CONFIG button until the message:

Save Settings?
PWR=No MODE=Yes

is displayed. Briefly press the MODE button to save the configuration data.

Linear Amplifier Reset

From the OFF state, press and hold the BAND+ button, and power the amplifier up. Continue to hold the button until the message:

Reset Defaults?
PWR=No BAND+=Yes

is displayed. Release the button, and briefly press the BAND+ button to restore the default settings. The amplifier will then enter its normal operating mode. Power off, and then press and hold the PWR button until the message:

Calibration
Mode v1.06d

is displayed. Release the button, and the first page of the calibration menu will be displayed. Re-enter your previous calibration data by using the UP and DOWN buttons to adjust the calibration factor. To step to the next page, briefly press the DISPLAY/CONFIG button. If the button is held, after a short delay the pages will step automatically. To step back to a previous page, briefly press the PWR button. If it is held, then the pages will step back automatically until the button is released.

Once you have re-entered all your previous calibration data, briefly press the OPER button, and the message:

Save Settings?
PWR=No BAND+=Yes

will be displayed. Briefly press the BAND+ button to save the new settings and exit.

In the normal operating mode, press and hold the DISPLAY/CONFIG button until the message:

User
Configuration

is displayed. Release the button and the first page of the User Configuration menu will be displayed. Using the UP and DOWN buttons, adjust the parameter as required. As in the Calibration & Setup mode, a brief press of the DISPLAY/CONFIG button will step to the

next page. Holding the button will cause the pages to step automatically. A brief press of the PWR button will step back a page, holding the PWR button will cause the pages to step back automatically.

When you have re-entered all of your configuration data, briefly press the OPER button and the message:

Save Settings?
PWR=No BAND+=Yes

will be displayed. Briefly press the BAND+ button to save the new settings and exit.

Adrian Ryan 5B4AIY
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