JHK Labs MTR2000 Buffered Interface

Configuring the MTR2000 with an external controller.

29 May 2026, Dave Maciorowski, WA1JHK

JHK-Labs, LLC, www.jhk-labs.com

PTT Jumpers

JP1: Optional pullup (default installed).

JP3: 3-2: Active-High, 1-2: Active-Low (default installed).

COR Jumpers

JP7: Optional pullup.

JP5: 1-2: Active-High, 3-2: Active-Low (default installed).

CTCSS Jumpers

JP6: Optional pullup.

JP4: 1-2: Active-High, 3-2: Active-Low (default installed).

Audio Path Jumpers

JP9: Select RX path as 3-2: Wireline, 1-2: Discriminator (default installed).

JP8: Select TX path as 3-2: Wireline, 1-2: Aux TX Input (default installed).

MTR2000 Station Configuration

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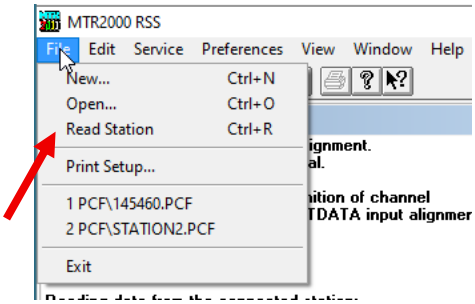
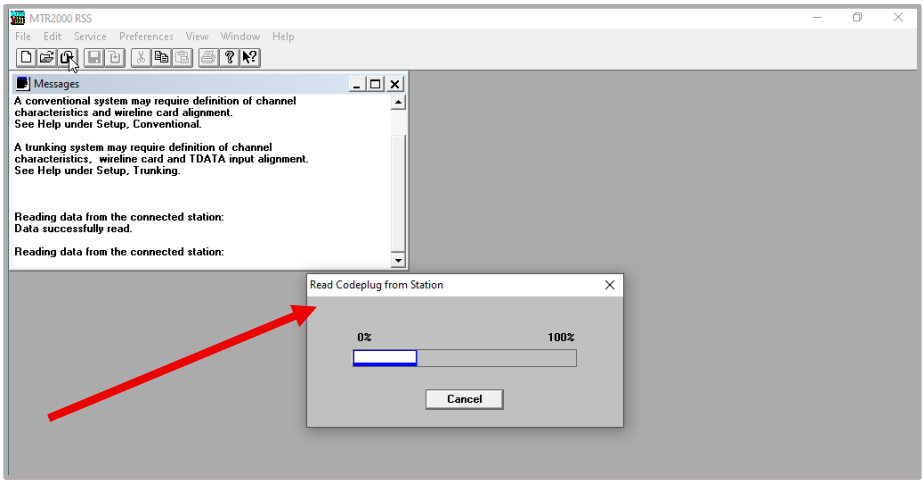
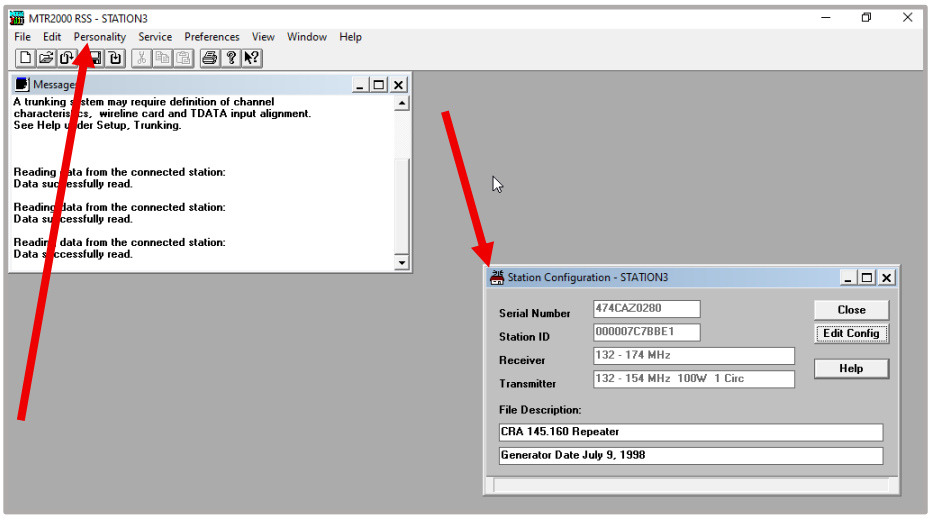
Click File|Read Station to load the MTR2000 Codeplug into RSS:



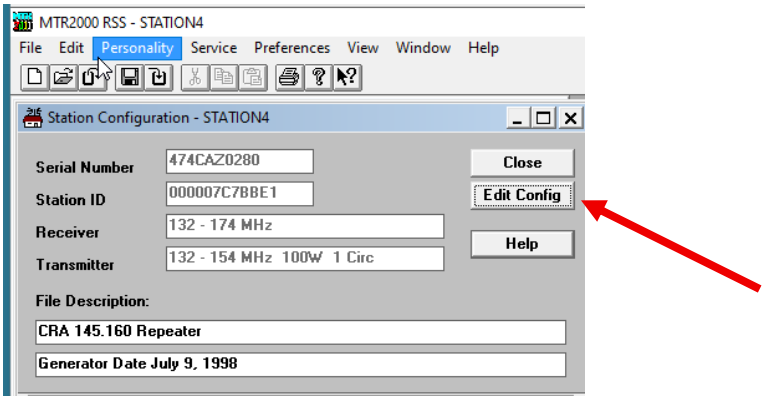


When the read is complete, a new Station Configuration window appears. That window must be left on the screen for the new menu item called Personality to be available.

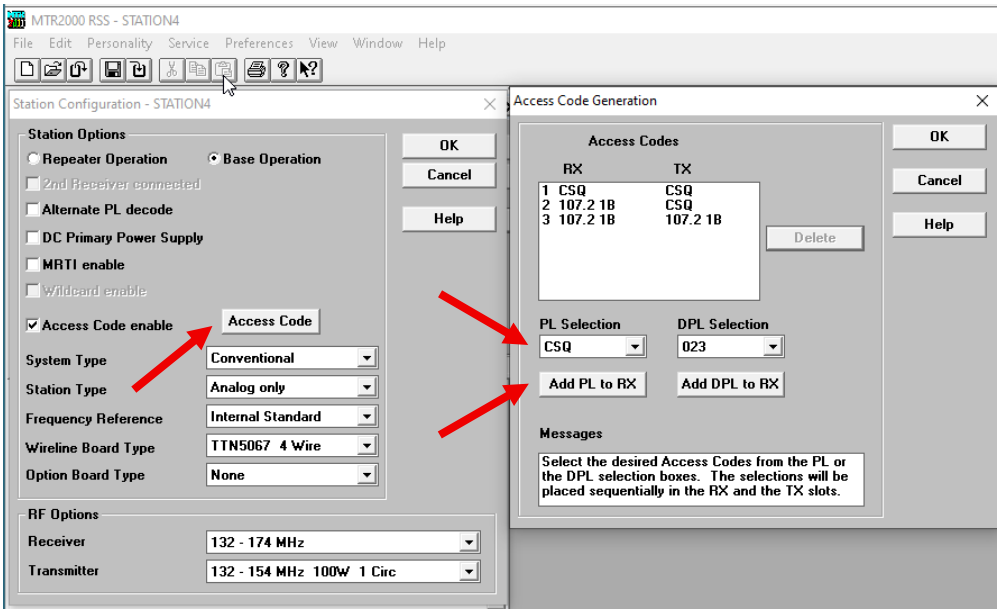


Edit Config

In Station Configuration, click Edit Config to begin the setup.



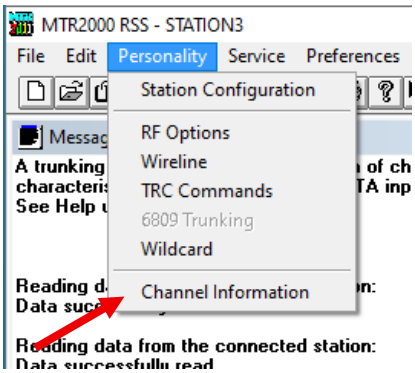
Click Access Code, then set the Access Codes that you want to select later in Channel Information. Note how I set up various combinations of RX and TX settings for the Access Codes.



Click OK in Access Code Generation, then OK in Station Configuration.

Setup Channel Information

Click Personality, then click Channel Information.



RF Options

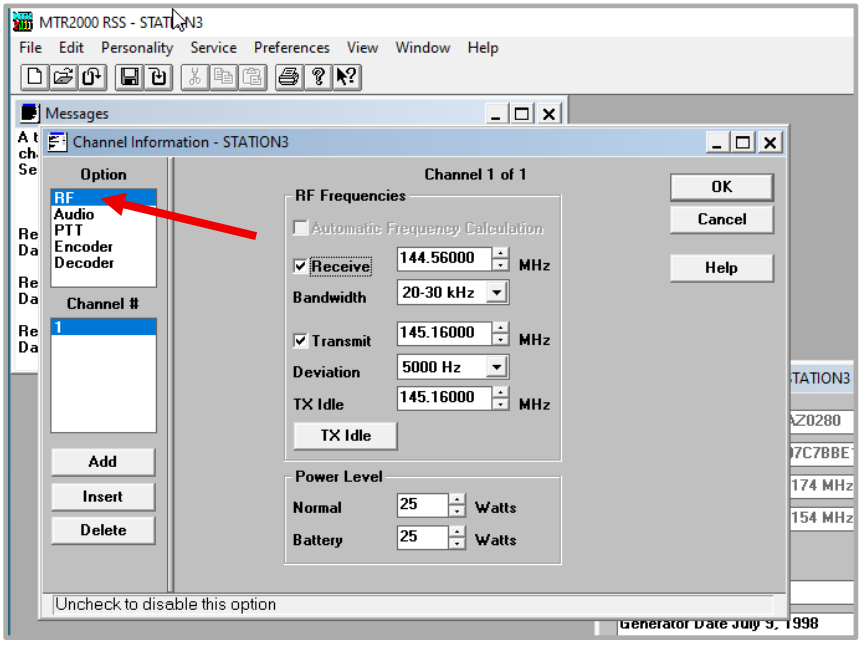
In Channel Information, select RF in the option list.

Set the RF Frequencies:

- Set the Receive Frequency and Bandwidth.
- Set the Transmit Frequency and Bandwidth.

Set the Power Levels:

- Set the Power Levels.



When done, click OK.

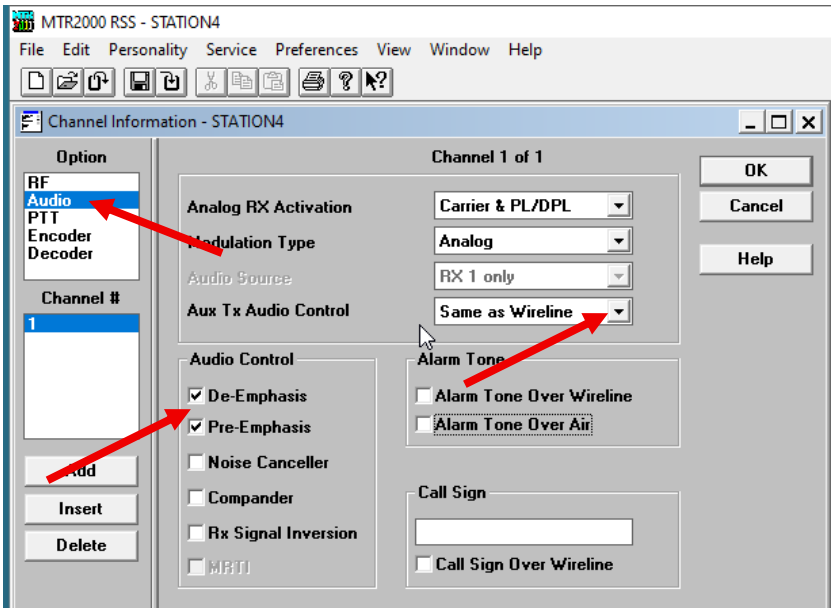
Audio Options

In Channel Information, select Audio in the option list.

Select De-Emphasis and Pre-Emphasis as required.

Select Aux Tx Audio Control as Same as Wireline.

You can turn off other options.

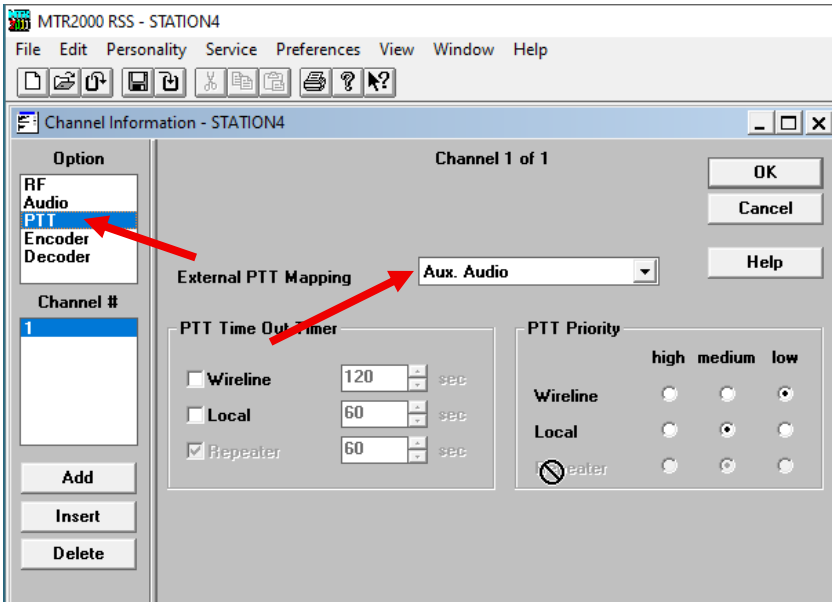


When done, click OK.

PTT Options

In Channel Information, select PTT in the option list.

Select External PTT Mapping as Aux Audio.

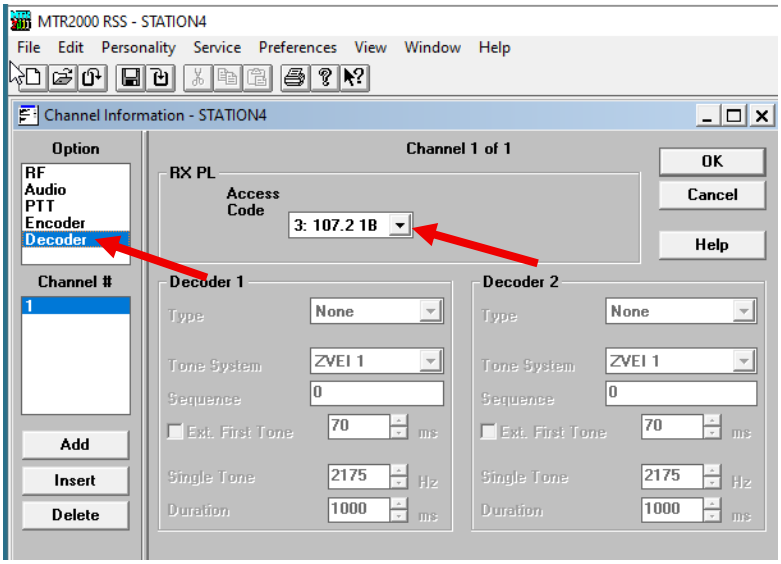


When done, click OK.

Decoder Options

In Channel Information, select Decoder in the option list.

Select an RX PL Access Code that was previously set up in the Station Configuration.

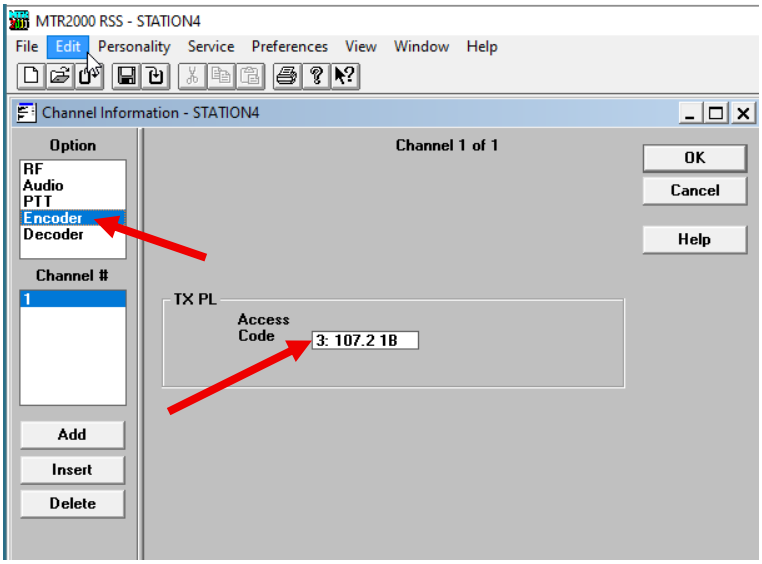


When done, click OK.

Encoder Options

In Channel Information, select Encoder in the option list.

Verify the Access Code that you wanted from the Decoder Access Code selection.

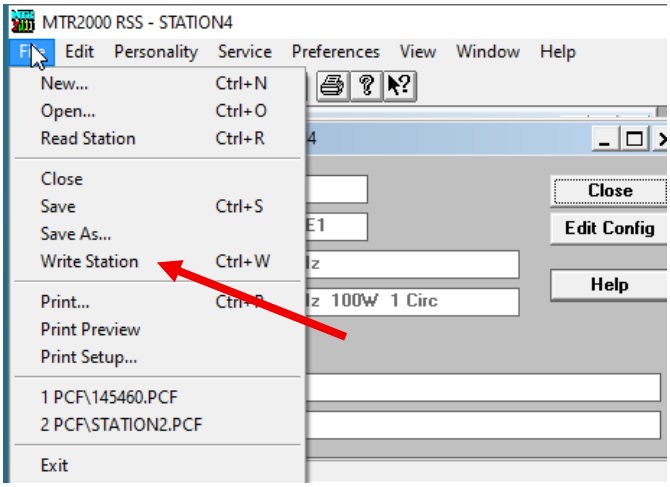


When done, click OK.

Finishing up the Channel Configuration

The final step of configuration is to Write Station. This writes the codeplug to the MTR2000 station and causes a station reset.

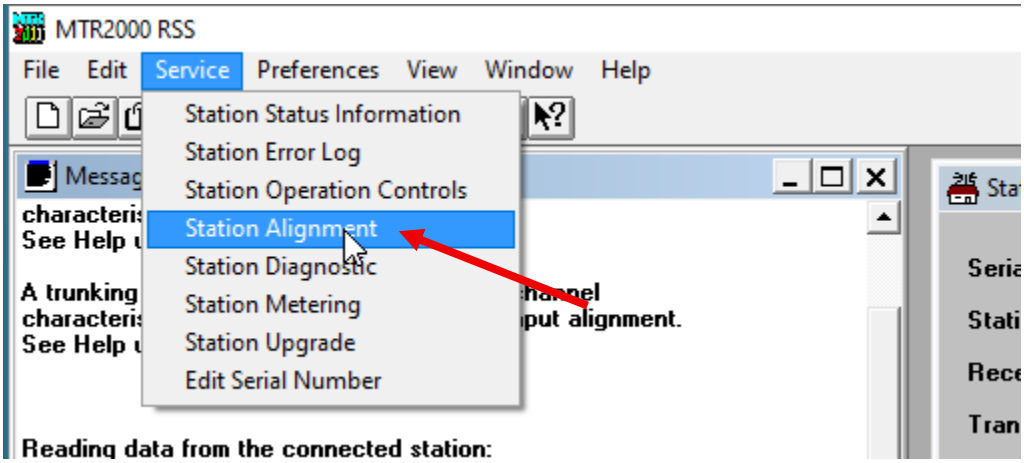
Click File|Write Station to do this.



Setting Audio Levels when using the Discriminator and Aux TX Input

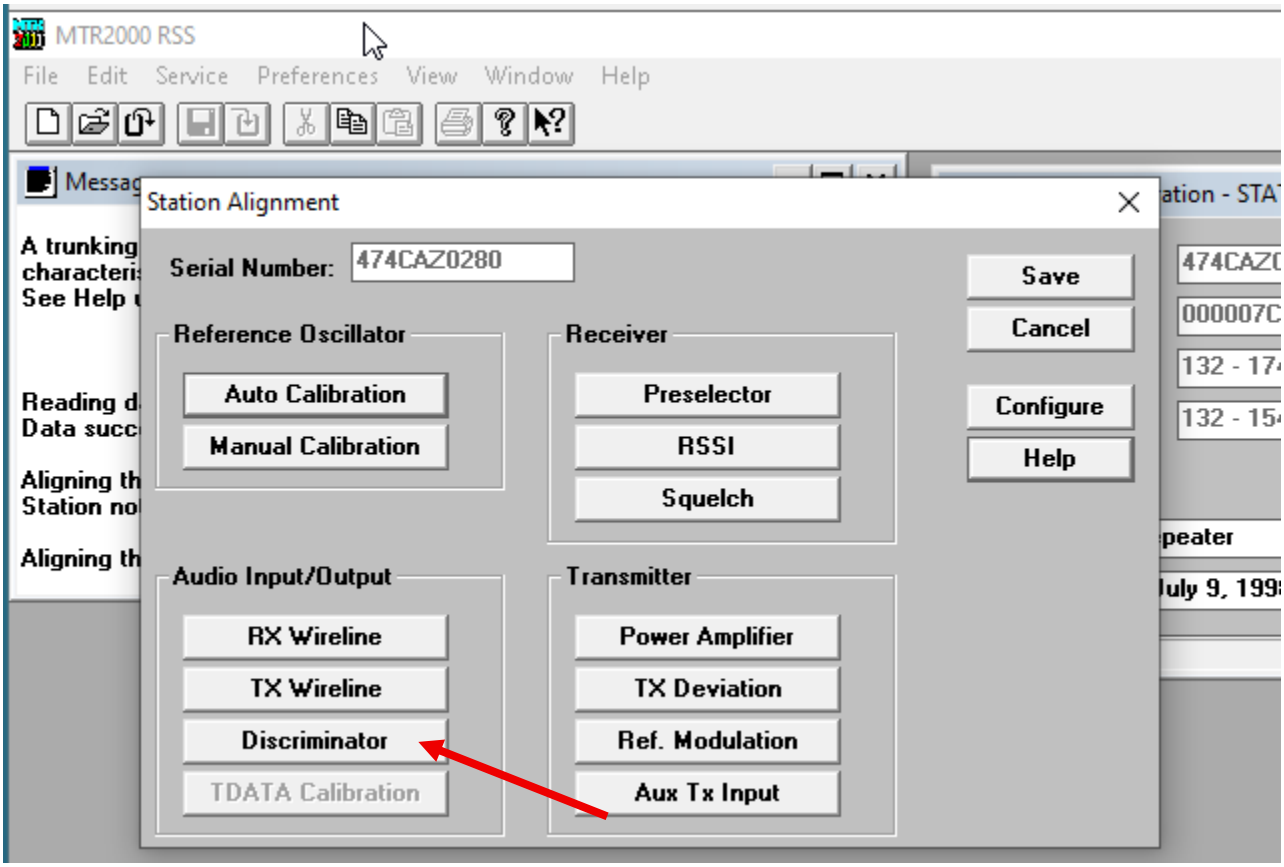
The MTR2000 Buffered Interface module contains no audio adjustment pots. All levels are adjusted using the Motorola RSS software specific to the MTR2000 or the pots in the external controller.

To set TX and RX levels using the MTR2000 soft pots, on the menu, click on Service|Station Alignment.

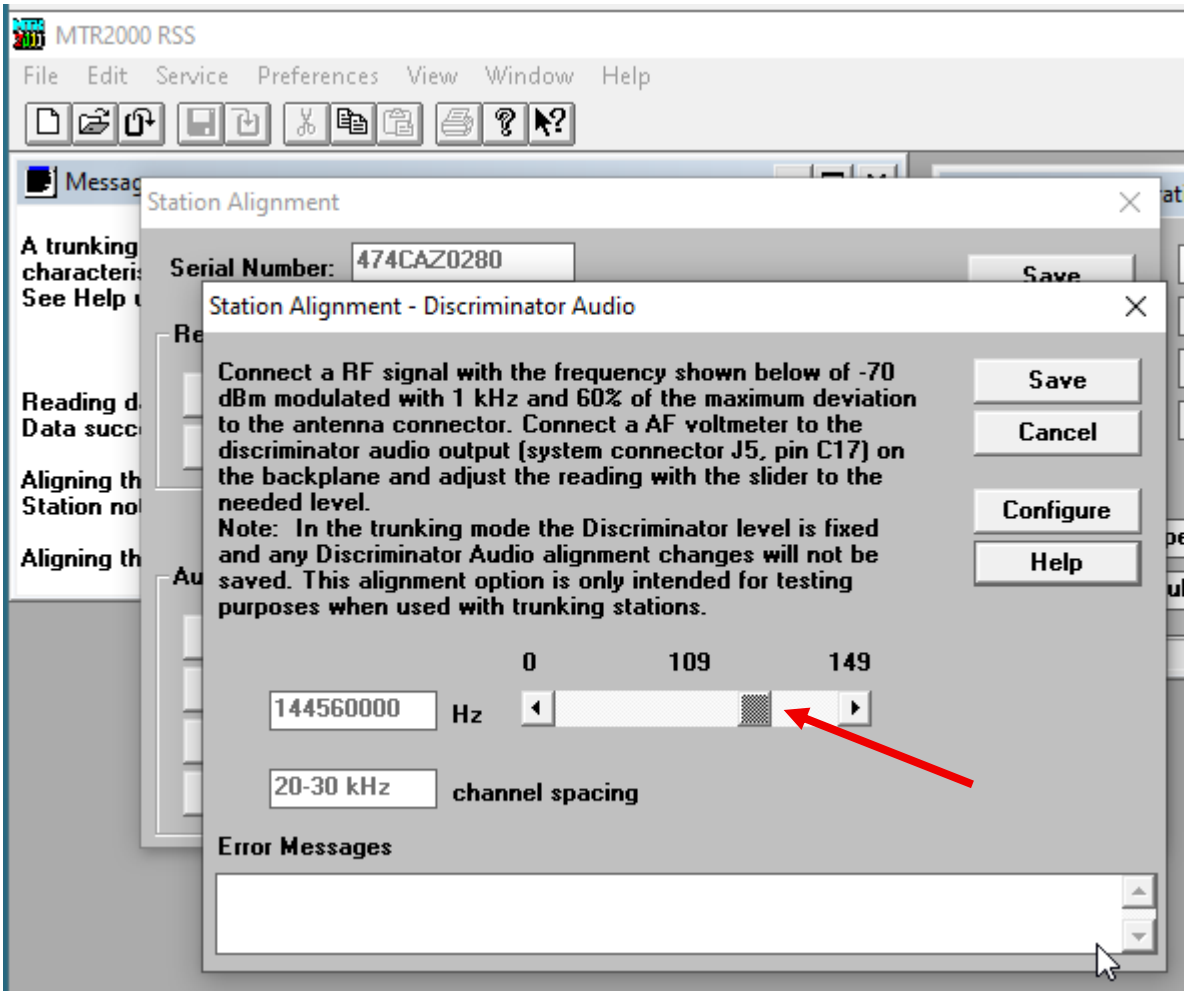


At this point RSS will read the currently programmed alignment information from your MTR2000 over the programming cable. This will take a few seconds.

The following form is displayed:



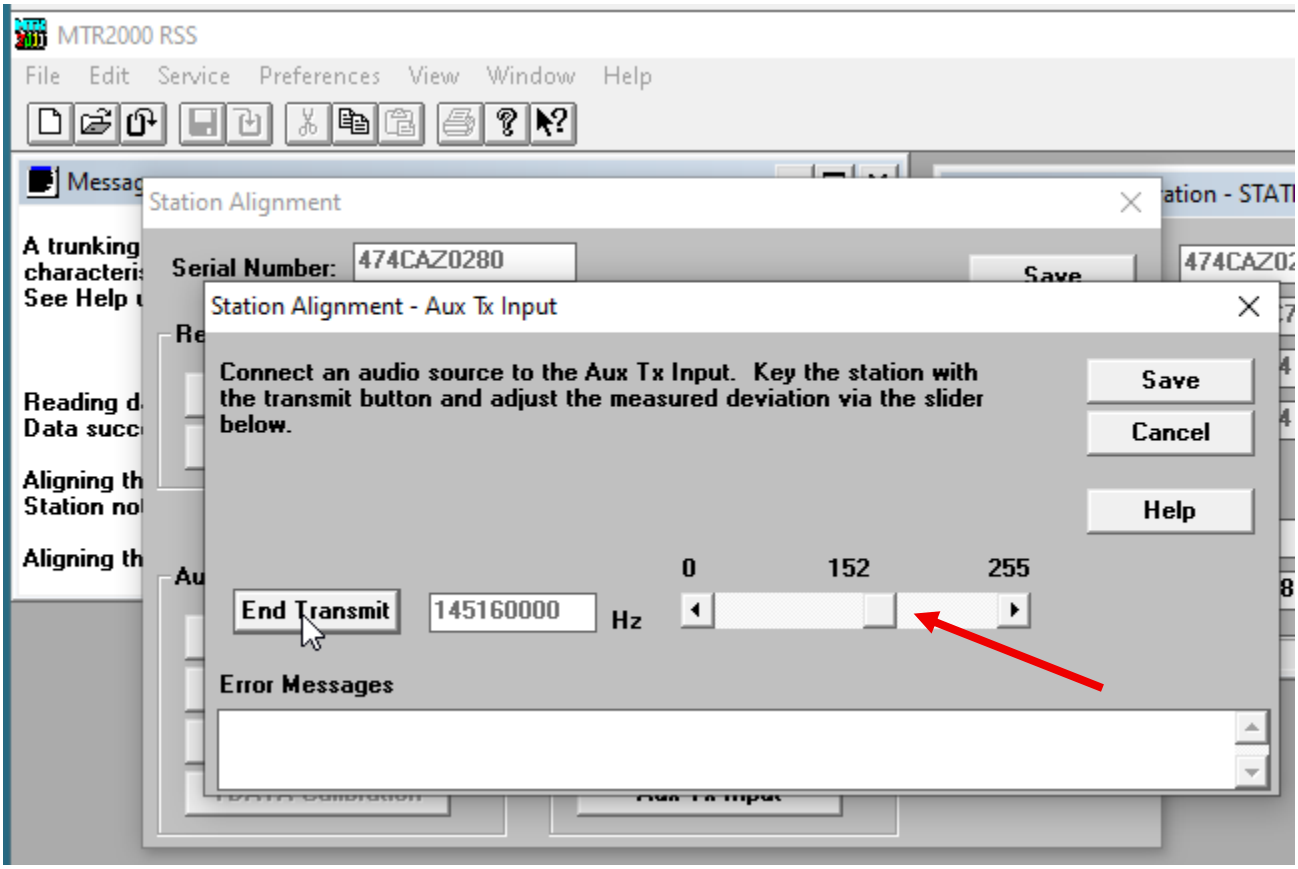
To set the RX audio level required by your external controller, click on Discriminator.



Set the level as required by your external controller. Note that if your external controller has a built-in audio level control, set this level for 1 Vpp on pin 1 of the Buffered Interface Radio Port terminal strip. Use the external controller's level control for the final setting. Click Save.

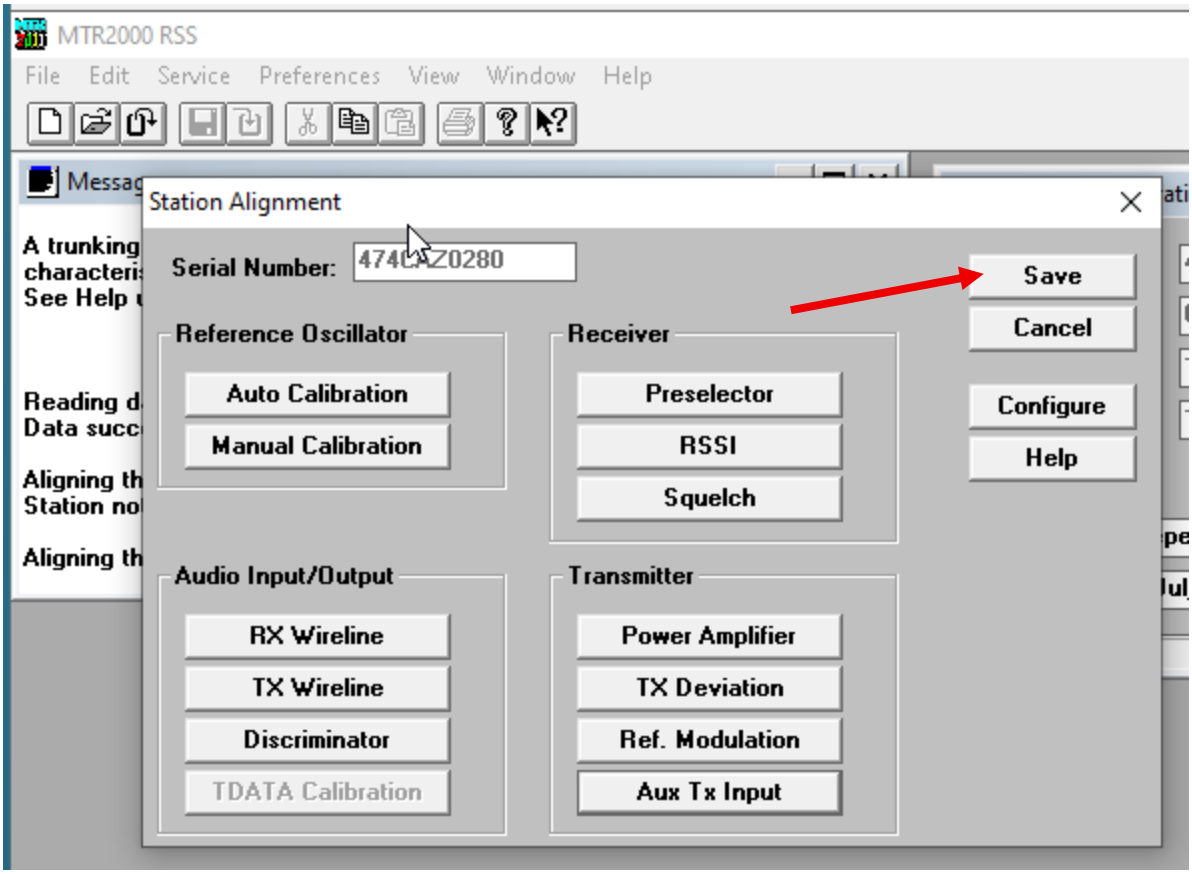
NOTE: you haven't yet saved this change to the controller. We'll do that after setting the TX audio input level.

To set the Aux TX Audio Input level, in the Station Alignment form, click Aux TX Input.



You set the Aux TX Input level control the same way as the RX Output level. While measuring deviation on a service monitor, adjust this input for your desired deviation. Note that if you are connected to an external controller that has its own audio level control, you could adjust this control for 1 Vpp at the Buffered Interface pin 3 then make the final adjustment with the external controller's level adjustment. Click Save.

NOTE: you're still not done! Finish up on the Station Alignment form.



Click Save on this form to write the audio level configurations to the MTR2000. After RSS writes the values, the station will reset. RSS will show this message during the reset.