

viaRadio Encoder Firmware Upgrade

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Version 1



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Introduction

As part of our on-going support of our RDS Encoders, we have released a free firmware upgrade (#18) that supports the following features:

- Default and Dynamic scrolling text with duration – displayed text will revert to default unless updated before Duration timer expires - useful if T & A is interrupted unexpectedly.
- Automatic creation of RT+ (Radiotext Plus) from **Artist=** and **Title=**
- Multiple protocols on Serial ports so that one STL serial channel can support both UECP control and plain text automation commands.
- Software decoder to analyze and see what RDS you are outputting (optional upgrade)

This update is fully backward compatible with Encoders shipped with ArcosConfig and you will not lose any functionality you have now. The update can be applied without manually reconfiguring anything by first saving and reapplying your saved config. The whole process will take < 10 mins

Considerations for older Encoders that do not already have ArcosConfig

If you have an older Encoder that does not have ArcosConfig then your Encoder may require a feature upgrade to use ArcosConfig. Please call viaRadio for help before proceeding.

Update Summary

The update consists of two firmware updates – NetPc v3.28 and Encoder v3.20. The NetPc update must be applied **first** (via IP) and the Encoder update must be performed second (via Serial) with a Null modem cable attached to front port of the RDS Encoder.

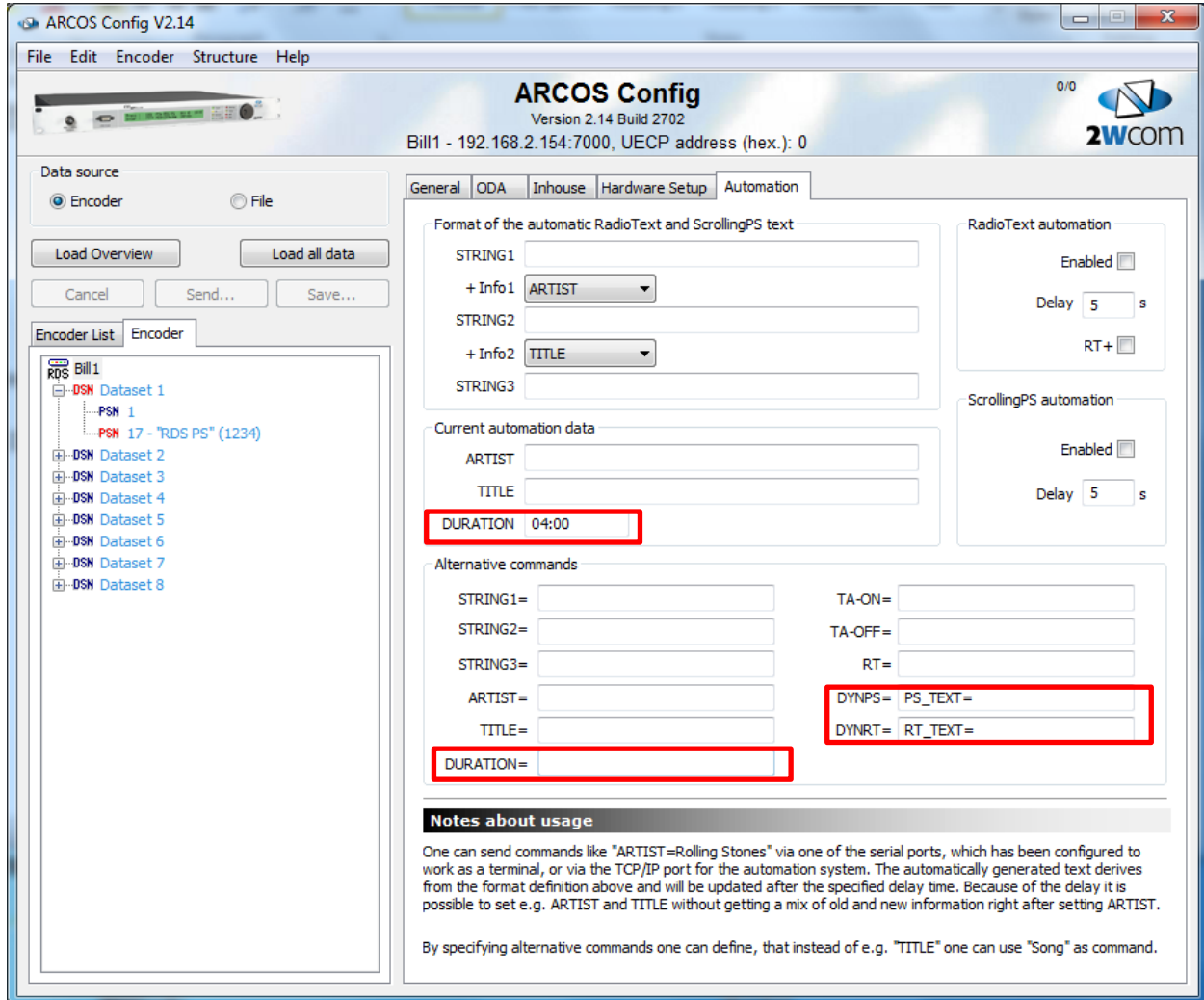
If you are an Emergency Warning station and we have connectivity from viaRadio then we may have already performed the NetPC update from here – call us and we will check for you!

Summary of steps:	Time to complete
<ul style="list-style-type: none">• Load new ArcosConfig SW.	1 min
<ul style="list-style-type: none">• Save config from Encoder	1 min
<ul style="list-style-type: none">• Call viaRadio	2 min
<ul style="list-style-type: none">• Check serial connectivity	1 min
<ul style="list-style-type: none">• Update NetPC firmware over IP	1 min
<ul style="list-style-type: none">• Update Encoder Firmware over Serial	3 min
<ul style="list-style-type: none">• Reload Saved Config over IP	<u>1 min</u>
Done!	10 mins total

New Features

Dynamic / Default Text with Duration

You can now set RT, Dynamic RT and Dynamic PS and a Duration Timeout value

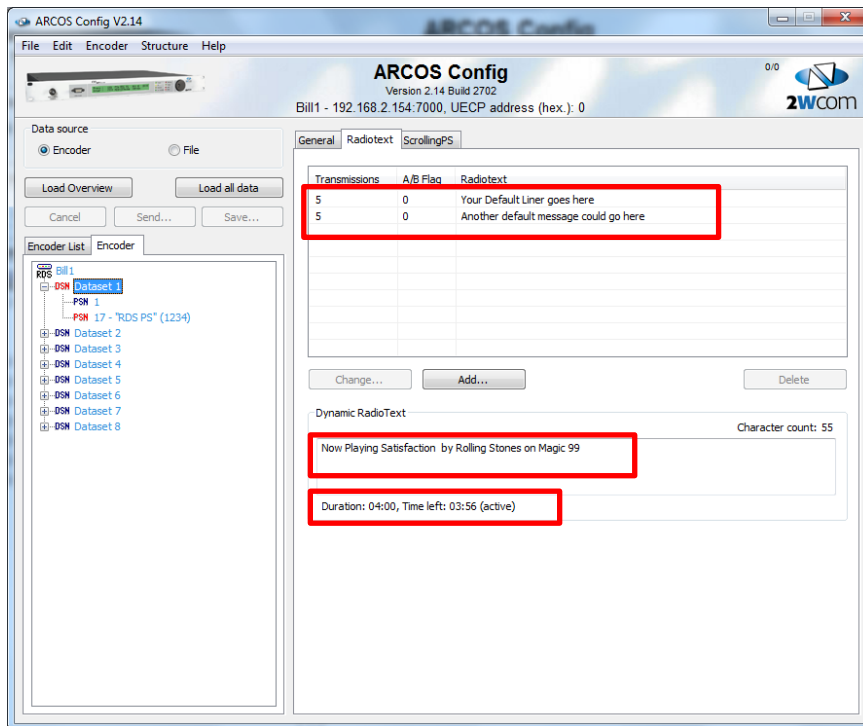


Typically stations will set the RT once with a default liner and then set the Duration to a value longer than then typical song – eg 5 mins. The Automation will then send Dynamic RT or Dynamic PS which will display as long as the Duration or until changed. If the T&A is not updated in time, then the message and the scrolling PS will revert to the default RT (unless the PS is being set directly in which case PS will revert to the static PS)

If your automation system supports it, you can also dynamically update the Duration with the actual length of the playing song.

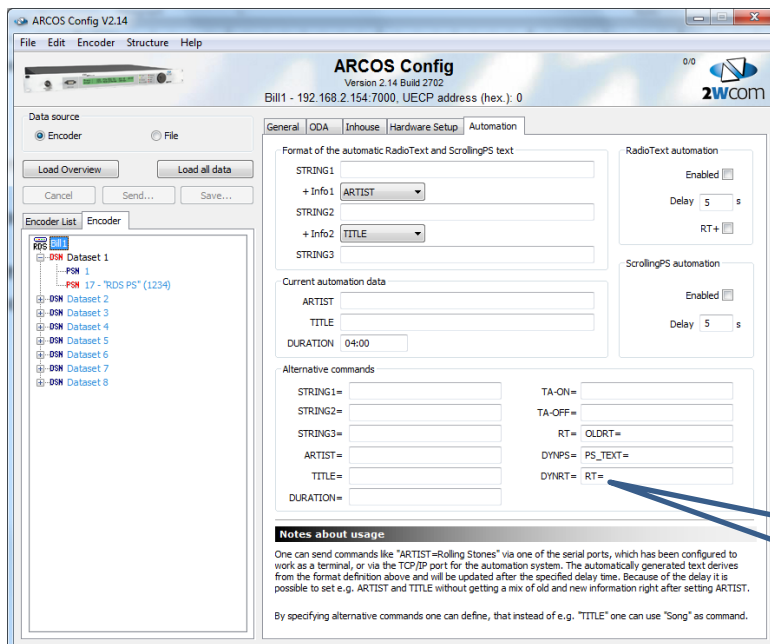
Here you can see that the Title & Artist (T&A) was updated 4 seconds ago so the RT is displaying **Now Playing Satisfaction by Rolling Stones on Magic 99.**

If it is not updated again within 3:56 then the text will revert to alternating between the two default strings shown until a new T&A is received again.



Implementation notes

If you are now updating using the **RT=** command (not an alternative) then you will have to change that command to something else since **RT=** cannot be an alternative command for DYNPS= or DYNRT=



This will not work since
RT= is a reserved command

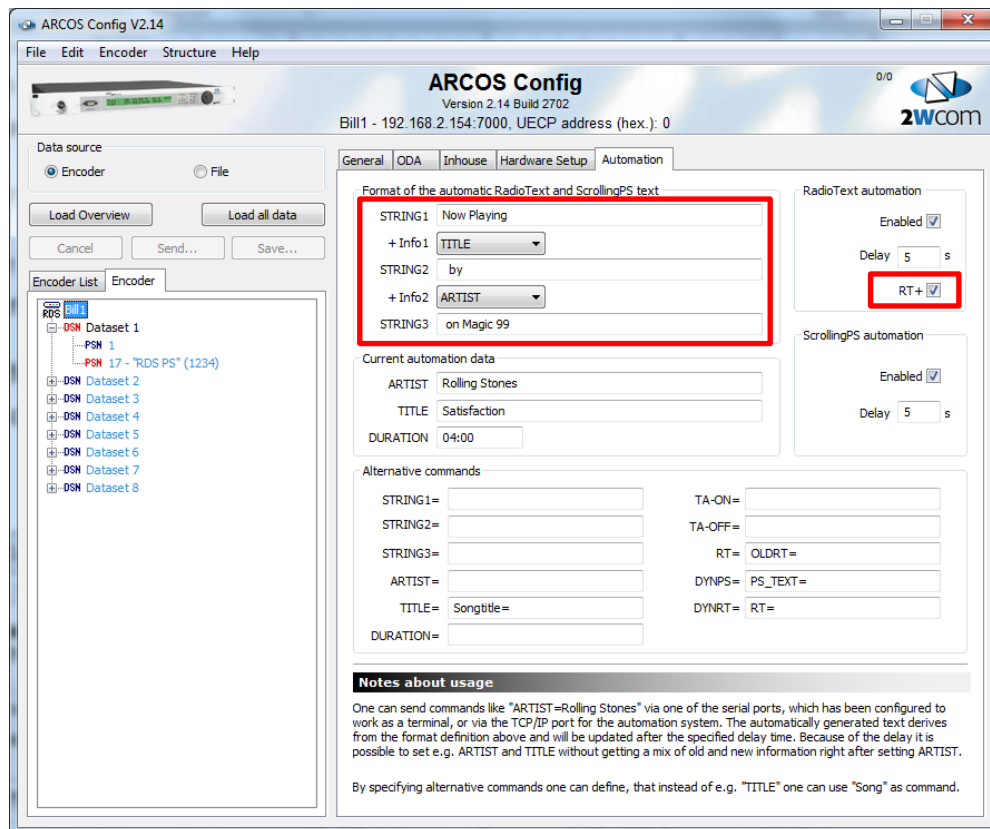
Automatic RT+

RT+ is an enhancement to Radiotext where various fields are identified by their position and length so that devices like IPODS can extract & display the Title and Artist from within the entire RT string.

So if your RT says **Now Playing Satisfaction by the Rolling Stones on Magic 99**, then the RT+ can tell devices that read RT+ that the Info.Artist field starts at character 32 and is 14 characters long.

In order for the Encoder to do this automatically, it must know what the Title and Artist are by sending them discretely with **Title=** and **Artist=** commands instead of sending the entire string at once.

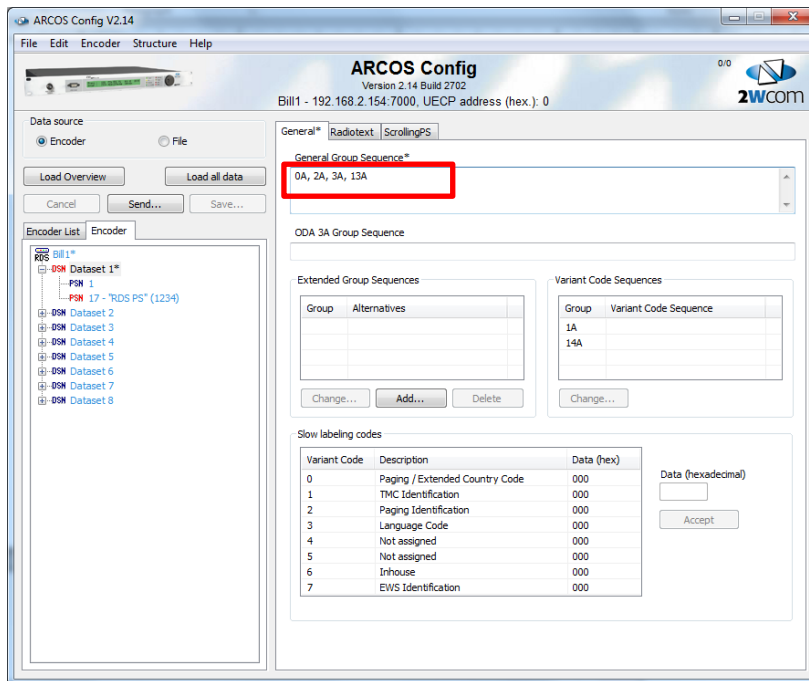
Here is an example of such a setup - Note that the RT+ checkbox has been checked



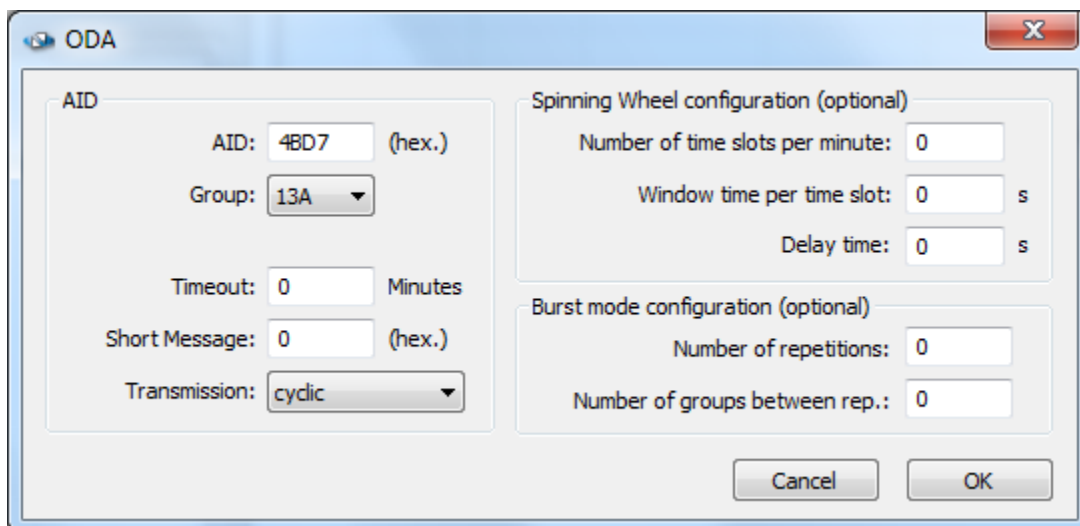
Next you must set up the RT+ data application and groups as follows

Pick an unused data group – eg 13A and add it to the group sequence along with 3A which tells radios which data group to use. Click Send

Here Dataset 1 is the active dataset and the General Group Sequence has been modified to add groups 3A and 13A

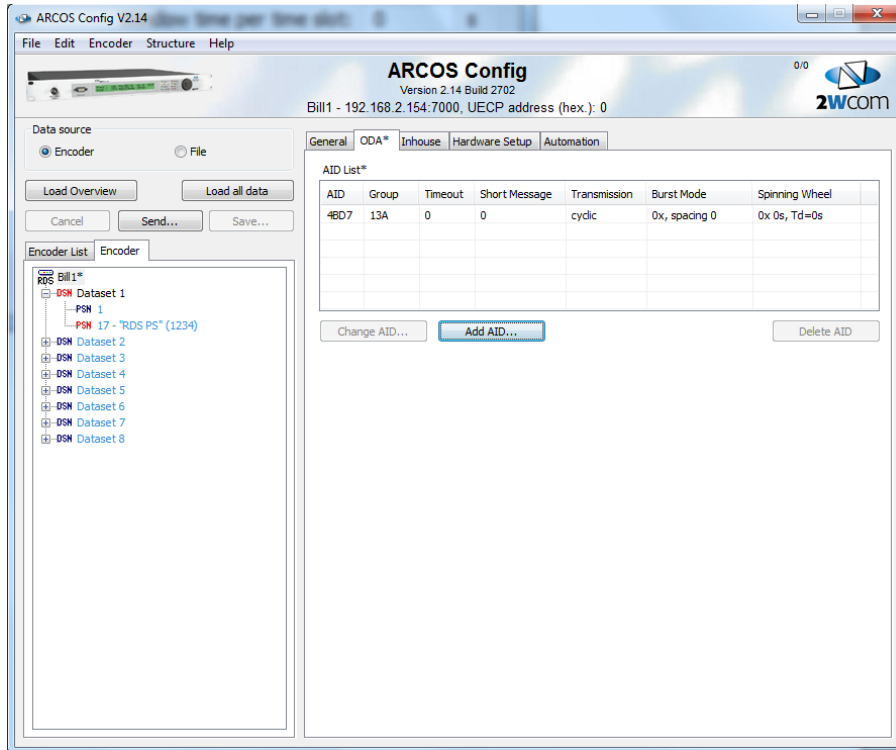


Go to ODA tab (Open Data Applications) of root (top) entry in left pane and add in the RT+ application as follows. Click **Add AID** and fill in AID= 4BD7, group = <the unused group from 9A to 13A you chose>



Click OK and then Send

The ODA tab should now look like this



Your RT+ is now set up and should display properly in devices like the IPOD Nano or Zune

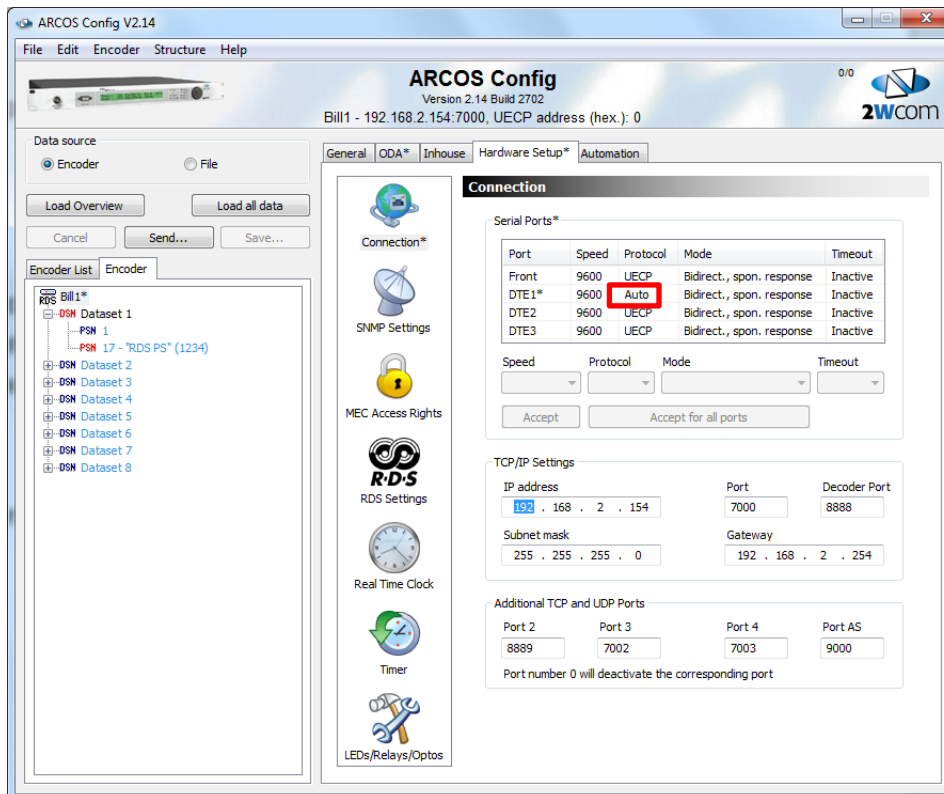
Multiple Protocols on Same Serial port

The encoder can now accept plain text automation commands like **RT=** on the same serial port used for binary communication by ArcosConfig or other UECP applications. So, if you have only one spare Serial port on your Digital STL you can use it for both purposes.

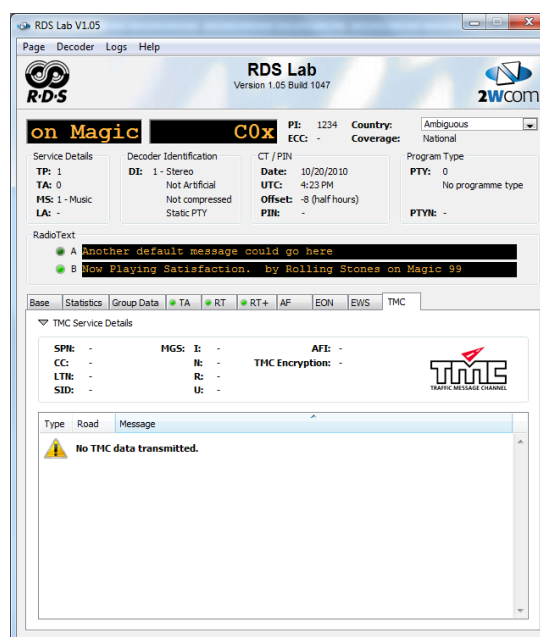
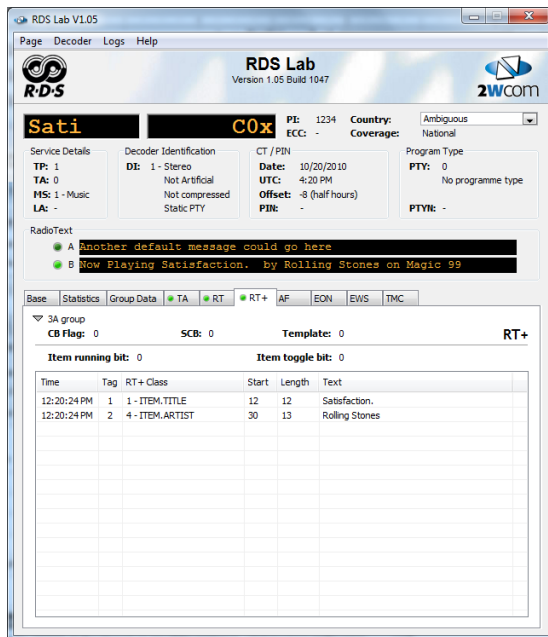
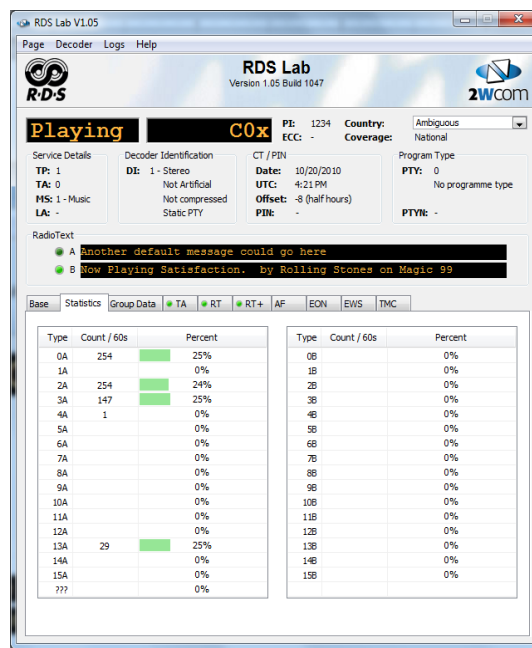
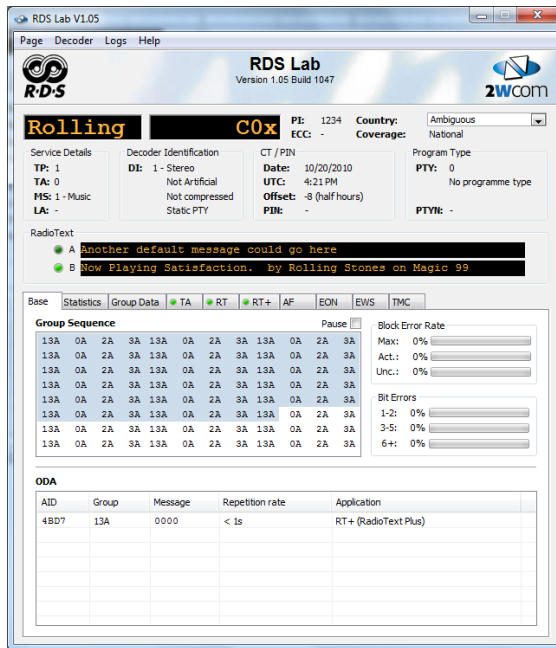
Setup.

Go to Root, Hardware Setup, Connection and set the Protocol of the port you want to use to "Auto". The port will now accept both types of command which you can easily queue up with a device like the [B&B vlinx IP to serial server](#)

Here I set DTE1 to Auto



For an additional cost, we can enable the RDS lab decoder/ analyzer function from the main screen using the Start Decoder Button. This will start RDS lab which can decode all RDS including RT+ and TMC data



Firmware Update Procedure

Typical setup with Firmware version 2.00 or above, accessible over IP.

1. Download the update package from <ftp.viaradio.biz> & Logon as:

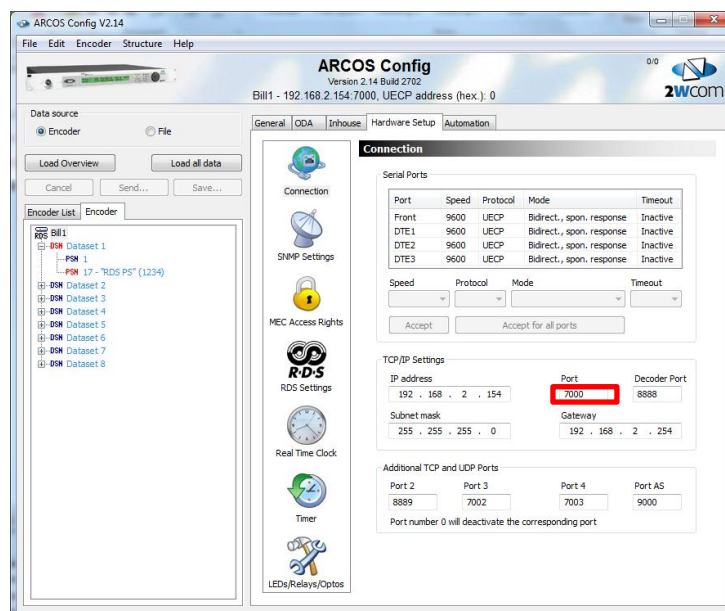
vrFTP_Radio

viaRadio

Copy the entire “**Encoder_US_Release_18**” tree to your local computer/laptop

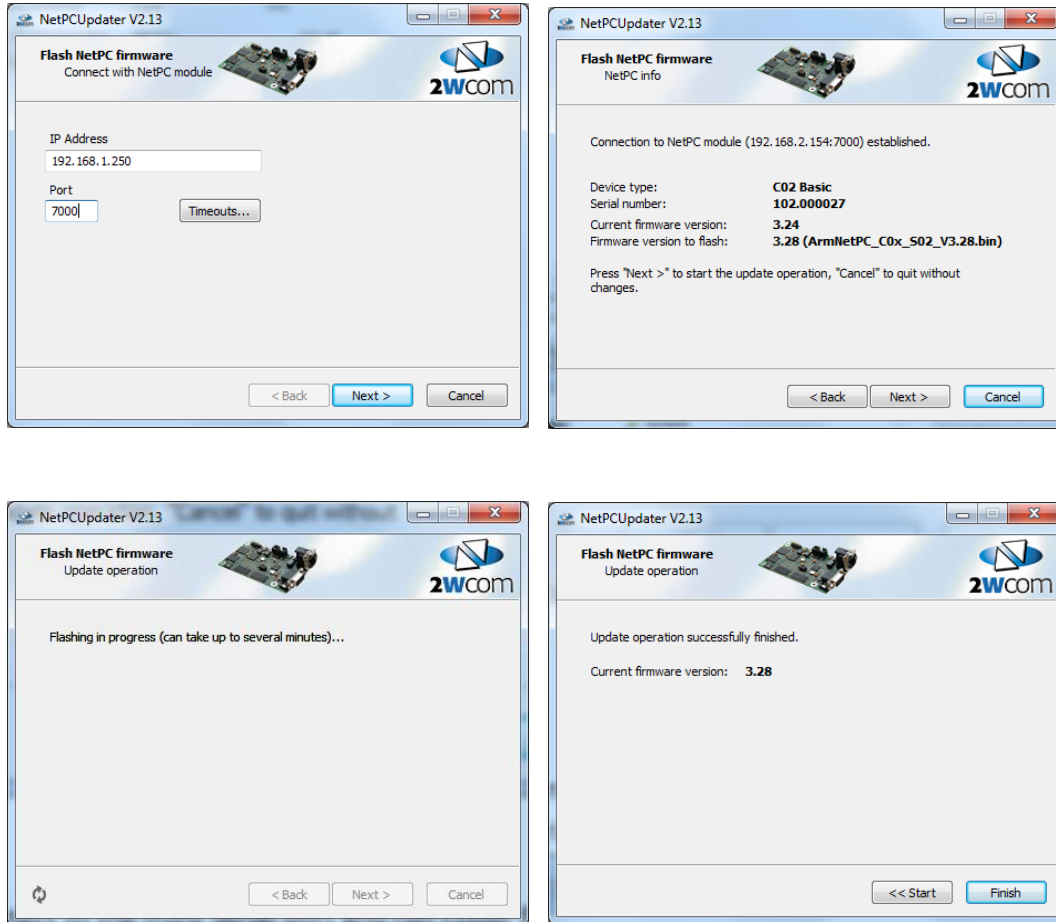
2. Run **ArcosConfigv214/Setup.exe** to install the ArcosConfig app on your local PC and laptop.
Note if this is an upgrade of existing install, it will remember your current connections.
3. Connect to your Encoder over IP to check connection and see if the NetPc is already at 3.28. If so you can skip steps 6 & 7.
4. Find a Null modem serial cable, female at both ends (we supplied one with the Encoder).
5. Take a Laptop with serial connectivity (eg USB to serial dongle) and the null modem cable to the Encoder and connect to front serial port via ArcosConfig. Click “Load All Data” and wait for it to finish. Click Save to save your current config.
6. Looking at the **Hardware Setup** tab, **Connection** of the root and note the port number of the main port (Port”) **You must only use the Main port (“Port”) to apply the update. It will fail halfway through if you use another port eg Port3.** We can perform the NetPc update remotely if we have connectivity or you can apply it yourself by connecting your laptop to the Encoder IP address via your lan.

In this encoder the main port number is 7000 so use that number to update



7. Run `\NetPcFirmware\ArmnetPC\NetPcUpdater.exe`

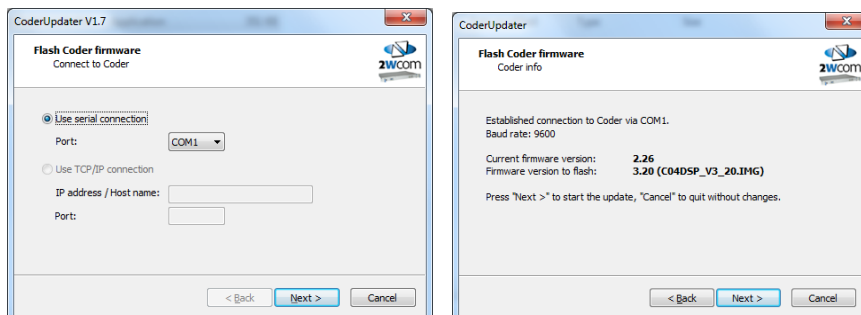
NetPcUpdater screenshots

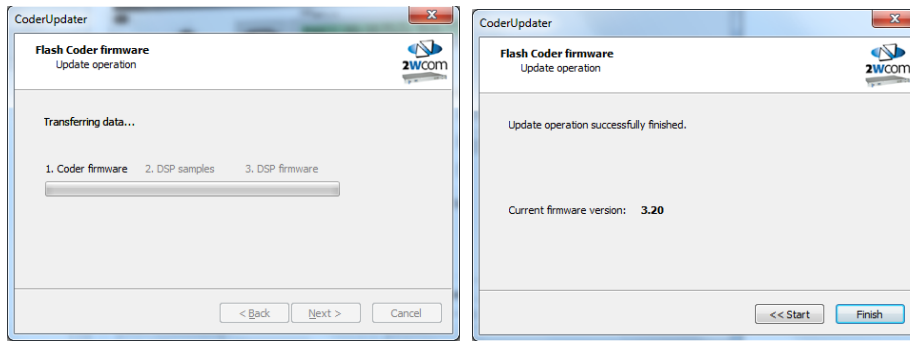


NetPc is now updated

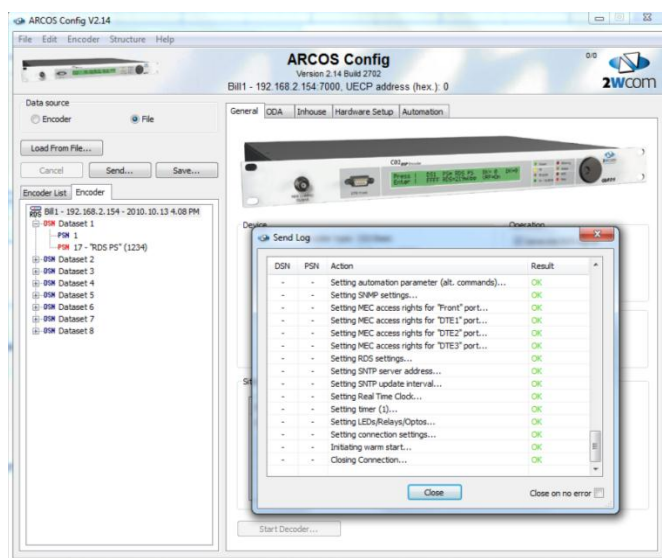
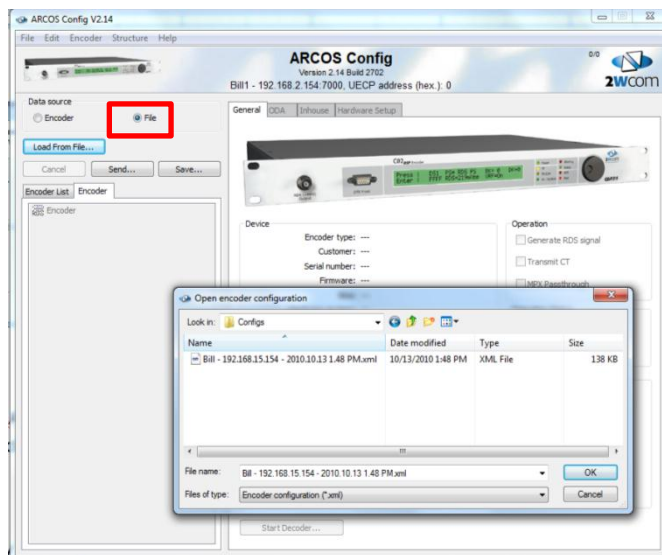
8. Reconnect to the front Serial port and run `Coder firmware\C04_DSP_V3_20.exe`

Note: You must use the front serial port





9. In ArcosConfig, select **Data Source - File, Load from File**. Choose the config you just saved and click Send to apply it. The Encoder will then have the same information as before.



Emergency Warning stations should then advise viaRadio by calling 321 242 0001 so we can recheck out connectivity and re-enable the EWS.

viaRadio corp 620 Atlantis Rd, Melbourne, FL 32904, Tel 321 242 0001, Radio@viaradio.com

Updating a Serial-Only setup.

If the Encoder does not have an Ethernet interface then you can just update the Encoder firmware as above, ignoring the NetPc update (steps 6 & 7)

But, if the encoder has an Ethernet interface that is not being used, you should still update the NetPC first over IP since the old NetPC firmware will not work with the new Encoder Firmware.