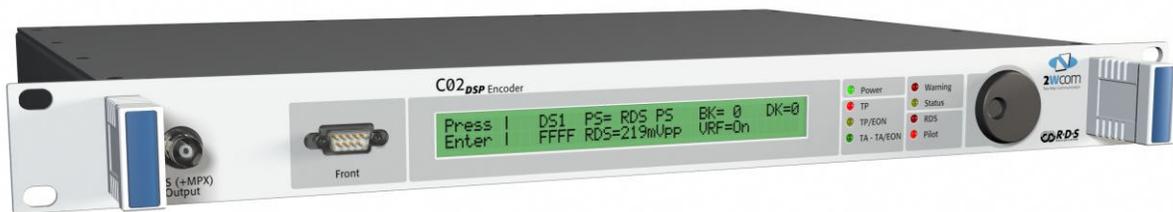




Interfacing Automation Systems with C02/C04 Encoder Models



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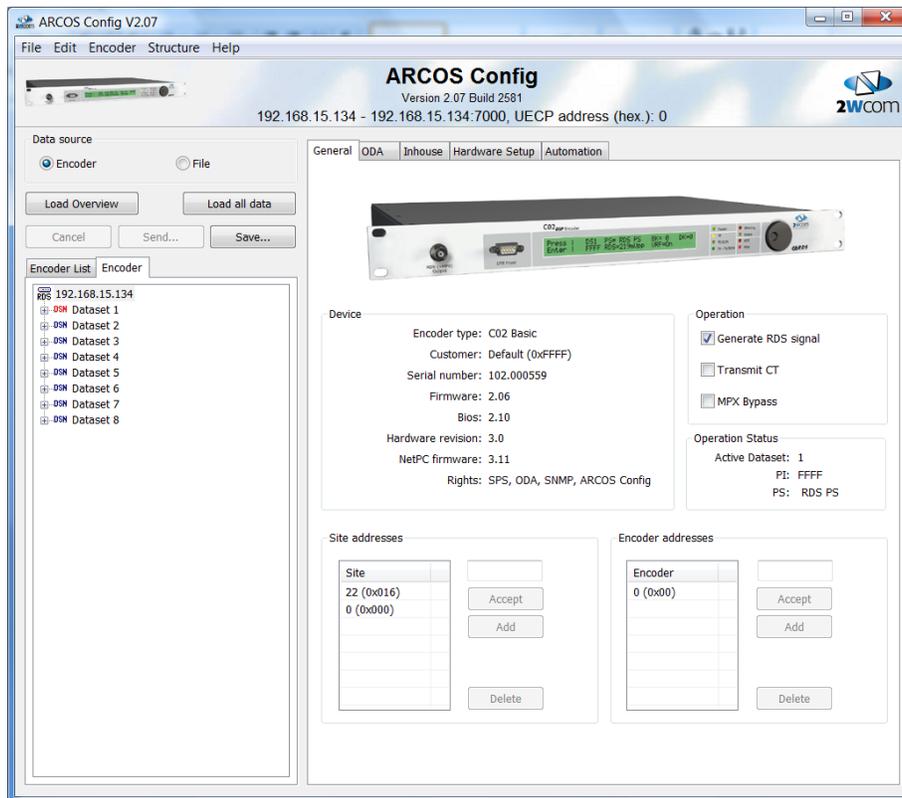
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INTRODUCTION

The C02 and C04 Encoders have always interfaced with various Automation systems but with the Version 8 Firmware package, interfacing is now much easier.

Before moving forward, make sure to check the firmware version of any existing encoder. If the firmware version is earlier than version 2.06 or ArcosConfig Software is not version 2.07, an upgrade to the latest version is required. For instructions see Appendix A (p. 12.)



NEW FEATURES OF U.S. RELEASE 8

This package includes ArcosConfig Version 2.07 Firmware 2.06 and NetPc 3.11.

All Automation configurations are now possible from ArcosConfig.

Automation alternative commands (aliases) can be set from ArcosConfig.

The encoder now supports 5 IP ports and one of them is dedicated to Text commands from remote Automations systems.

USING AUTOMATION

BASIC DEFINITIONS

RadioText or RT	A text message up to 64 characters long that will scroll smoothly on most RDS radios but typically only after the user pushes a button. In the C02 or C04 encoder, up to 8 lines of RT can be set to rotate.
PS	The 8 character default display of an RDS radio – usually calls (WABC) or slogans (Fox 95).
Scrolling PS or DYNPS	A means to fit more than 8 characters in the PS by changing it in a way that looks as it is scrolling.
Simple Scrolling	Traditional style - moving the text a few characters to the left every x seconds.
Smart Scrolling	Jump ahead by whole words whenever possible.

OVERVIEW

This implementation of scrolling PS uses one of 3 sources:

- a) The current RadioText – whatever is scrolling in RadioText currently
- b) A manually entered string – up to 160 characters long placed in DYNPS buffer
- c) A constructed string of static elements and changing elements such as Title and Artist

The data can be entered directly in ArcosConfig, using a simple text interface such as Telnet or an Automation system via Serial or IP

MODES

There are 3 modes:

1. No Scrolling: Uses the normal 8 character PS.
2. Simple scrolling: Advances x characters per update.
3. Smart scrolling: Advances whole words whenever possible.

MODE 1 – NO SCROLLING

Encoder behaves as it does now using only the “real” PS (usually call letters)

MODE 2 – SIMPLE SCROLLING

Simple scrolling displays long text 8 characters at a time.

Example:

RT1 = “Fred and Joe in the mornings on Fox 95”

RT2 = “Free Cash every Day, on Fox 95”

Characters to Advance in simple scrolling = 3

Use RT = True

Update Interval = 4000

Each frame advances 3 characters after 4000 mS.

Display advances as follows:

F r e d a n d

d a n d J o

n d J o e i

J o e i n t

i n t h e m

t h e m o r n

m o r n i n g s

n i n g s o n

g s o n F o

o n F o x 9

F o x 9 5

F r e e C a s

e C a s h e

MODE 3 – SMART SCROLLING

Smart scrolling displays as many whole words as possible within the next 8 character places. Word delimiters are space “ ”, hyphen “-”, and comma “,”. The underscore “_” is displayed as a space so it can be used to link two words together so they always display together.

If the next word is longer than 8 characters then it will be broken up and advanced according to the Character advance in Smart Mode value.

Example

DYNPS Text = “Coming up next, the Smithereens on Fox_95”

RT1 = “Fred and Joe in the mornings on Fox 95”

RT2 = “Free Cash every Day, on Fox 95”

Characters to display in Smart Scrolling = 5

Use RT = False

Update Interval = 4000

Display

Coming

up next,

the

Smith

ereens

on

Fox 95

Notes: Using DYNPS, “Smithereens” is too long so it was broken at 5 characters. The invisible underscore between “Fox and 95” made it one word preventing frame 6 from displaying as “on Fox” and Frame 7 being “95”.

AUTOMATION INTERFACE FOR THE RDS ENCODER C02DSP

The automation interface uses plain text commands to send data to the Encoder.

If using a Serial port, that serial port will first need to be configured with ArcosConfig or the Jogwheel to “Term” protocol NOT “UECP” – Encoders ship with port DTE3 set to Term.

If using TCP or UDP, the port used will need to be entered in the Hardware, Setup Connection tab in the **PORT AS** field (See figure 1)

The screenshot shows the ARCOS Config V2.07 software interface. The main window title is "ARCOS Config" with version "Version 2.07 Build 2581" and the IP address "192.168.15.134 - 192.168.15.134:7000, UECP address (hex.): 0". The interface is divided into several sections:

- Data source:** Radio buttons for "Encoder" (selected) and "File". Buttons for "Load Overview", "Load all data", "Cancel", "Send...", and "Save..." are present.
- Encoder List:** A list of encoders including "RDS 192.168.15.134" and "Dataset 1" through "Dataset 8".
- Navigation icons:** A vertical column of icons for "Connection", "SNMP Settings", "MEC Access Rights", "RDS Settings", "Real Time Clock", "Timer", and "LEDs/Relays/Optos".
- Automation Tab:** The active tab, containing:
 - Connection:** A table of Serial Ports and configuration options.

Port	Speed	Protocol	Mode	Timeout
Front	9600	UECP	Bidirect., spon. response	Inactive
DTE1	9600	UECP	Bidirect., spon. response	Inactive
DTE2	9600	UECP	Bidirect., spon. response	Inactive
DTE3	9600	Terminal	Echo On	Inactive

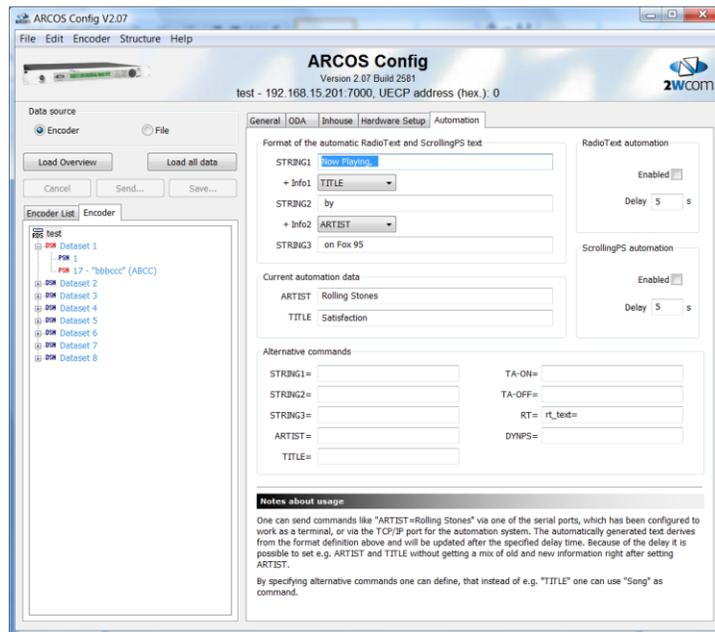
Below the table are dropdown menus for Speed, Protocol, Mode, and Timeout, and "Accept" and "Accept for all ports" buttons.
 - TCP/IP Settings:** Input fields for IP address (192 . 168 . 15 . 134), Port (7000), Subnet mask (255 . 255 . 255 . 0), and Gateway (192 . 168 . 15 . 1).
 - Additional TCP/IP Ports:** Input fields for Port 2 (65535), Port 3 (0), Port 4 (0), and Port AS (7002). A note states: "Port number 0 will deactivate the corresponding port".

There are two options for assembling the text to display

1. Use the Automation system to assemble the text you want to display such as **coming up next the Rolling Stones on Fox 95** and then add a header such as RT= to make this a command that the Encoder can understand and then send:

RT=coming up next the Rolling Stones on Fox 95

Note: If you only have certain command headers or do not want to change them, you can tell the Encoder to accept your header, so if your text header is rt_text= then you can set that up as an RT= 'Alternative command' in ArcosConfig.



2. The other way to use this is to have your Automation system output only Title and Artist information and then assemble the string you want to display in the RDS encoder according to a template you have set up.

For example, by just sending **Song=Satisfaction** and **ARTIST=Rolling Stones** the Encoder composes a complete string of:

Now Playing, Satisfaction by Rolling Stones on Fox 95

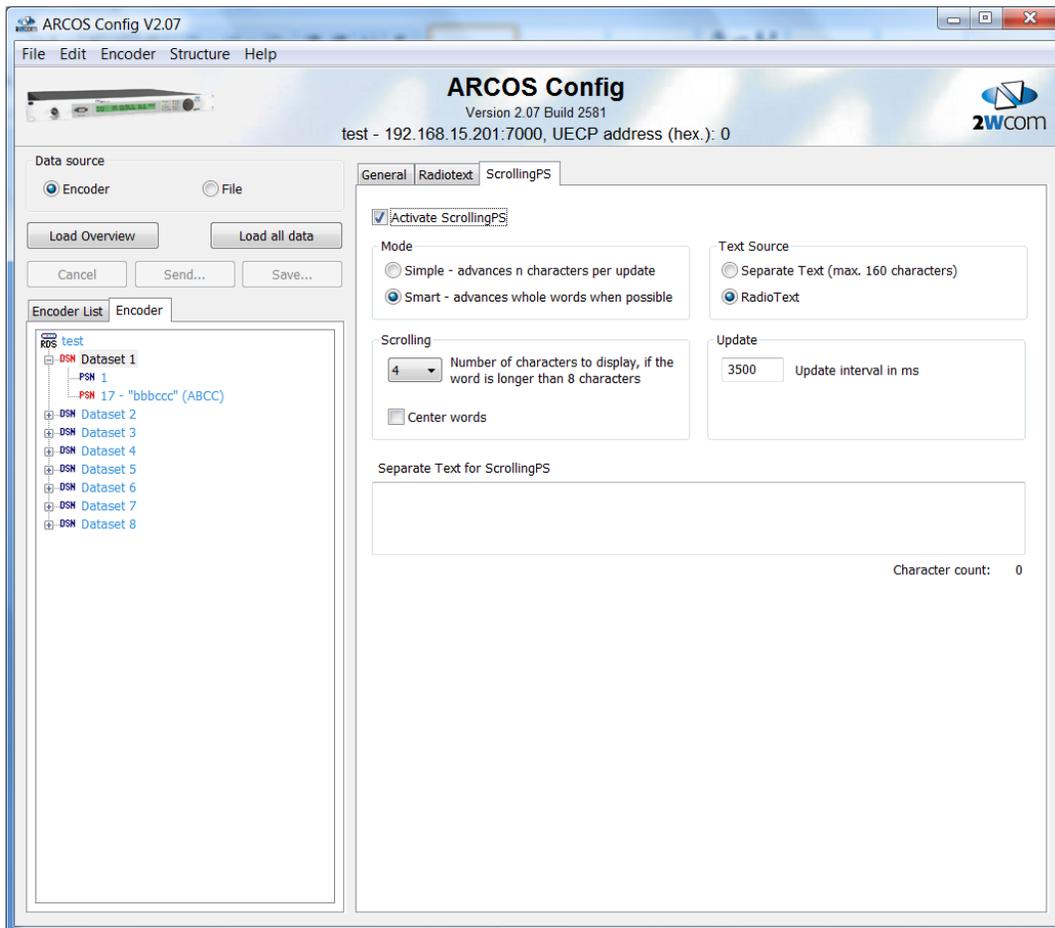
In order to use method 2, it is required to enable the "Automation Enabled" checkbox and set a timeout – 5 seconds is usually plenty for both Title and Artist to arrive and be processed.

SCROLLING PS CONFIGURATION

The Scrolling PS (or Dynamic PS) can either be set directly or repeat what is being sent over RadioText (RT).

Scrolling PS does need to be enabled and configured on the ScrollingPS tab of the current Dataset (the one in Red).

The settings shown below are a good starting point. Please bear in mind that different car radios handle Scrolling PS better than others and that a slower Update Interval will always help with troublesome car radios.



STANDARD AUTOMATION SYSTEM COMMANDS THAT CAN BE SENT TO ENCODER

DYNPS = 0-99 characters. This replaces any contents of the entire DYNPS buffer

RT= 0-64 characters. This replaces any contents of RT buffer # 1

RT(1...8)= 0-64 characters. This replaces any contents of the specific RT buffer.

TA-ON Traffic Announcement ON – could be used with traffic or weather bed

TA-OFF Traffic Announcement OFF– could be used with traffic or weather bed

TA-(1-99) This tells the encoder to activate TA=ON for a specific number of seconds

DS=(1...8) This makes the specified Dataset the Active Dataset.

PTY= 0-31 Format code of current format – useful for block programming of different formats. Note that setting this to 31 will trigger most RDS radios into EAS mode

FIELDS THAT WILL BE STORED BY ENCODER

STRING1= 0-64 characters - eg " Now Playing "

STRING2= 0-64 characters - eg " by " < notice extra spaces>

STRING3= 0-64 characters - eg " on Fox_95" < underscore is not printed but keeps words together

TITLE= 0-64 characters - eg "Satisfaction"

ARTIST= 0-64 characters - eg "The Rolling Stones"

SETUP COMMANDS

FORMAT_DYNPS= Template of fields to use for DYNPS

EXAMPLE:

FORMAT_DYNPS= STRING1+TITLE+STRING2+ARTIST+STRING3

Station sets **STRING1**="Now Playing, "; **STRING2**=" by "; and **STRING3**=" on Fox_95".

Automation system issues **Title**="Satisfaction". DYNPS_DELAY timer starts.

Automation system issues **ARTIST**="Rolling Stones". DYNPS_DELAY timer is triggered again.

DYNPS_DELAY timer expires, so Encoder assembles the string and sets DYNPS to:

Now Playing, Satisfaction by Rolling Stones on Fox 95 (note the underscore is not seen)

AUTO_DYNPS= Y/N. This automatically creates DYNPS if any of its fields change

DYNPS_DELAY= 0-30 seconds.

FORMAT_RT= String of fields to use for RT #1

AUTO_RT= Y/N – put Title and Artist info into RT too

RT_DELAY= 0-30 seconds

APPENDIX A

Installing the new Firmware from CD or Zip

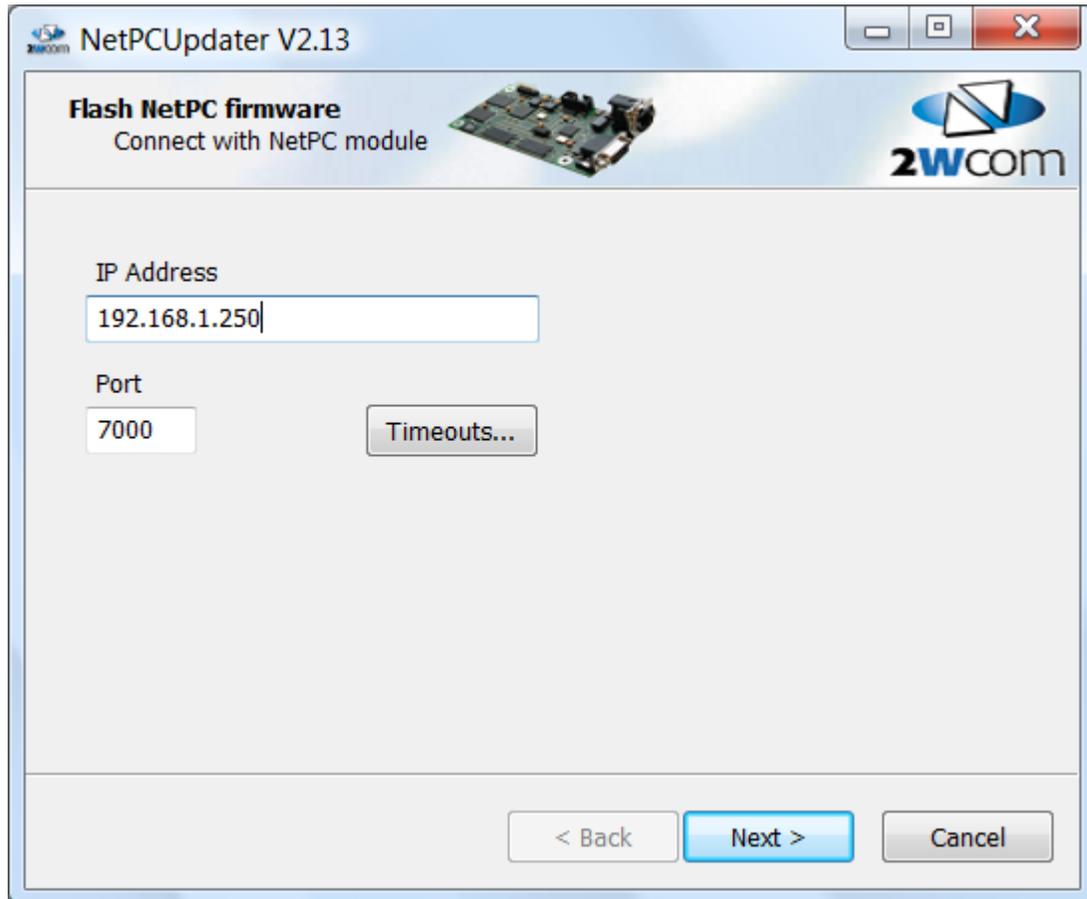
To get the package online go to http://viaradio.com/d0wnloads/SW/US_Release_8.zip

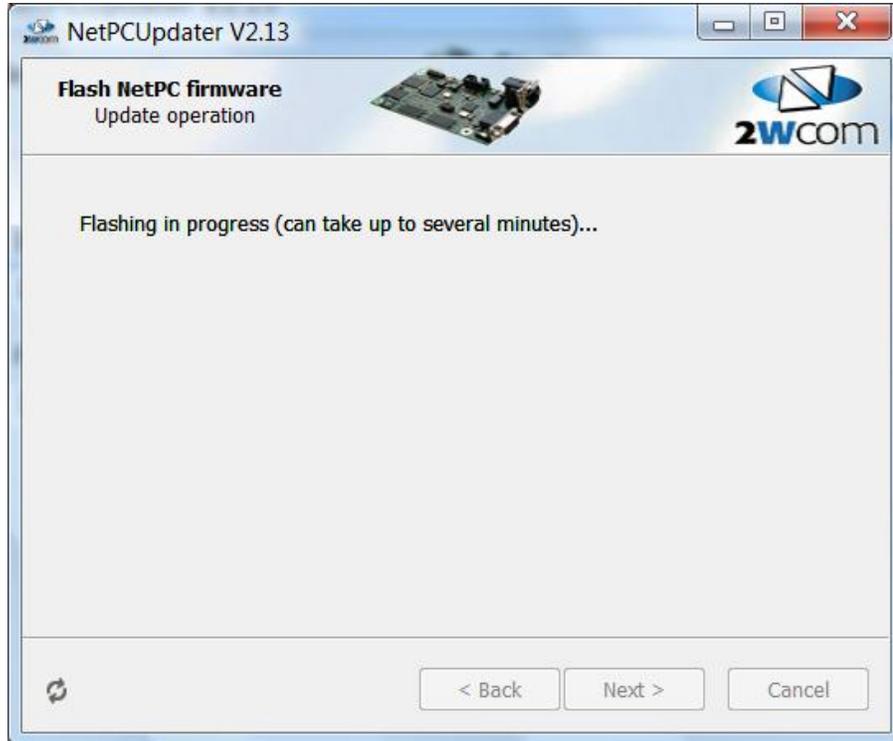
This is a three step process

1. Update NetPC firmware over TCP port
2. Update Encoder firmware using Front serial port
3. Update/Install ArcosConfig software on controlling computer(s)

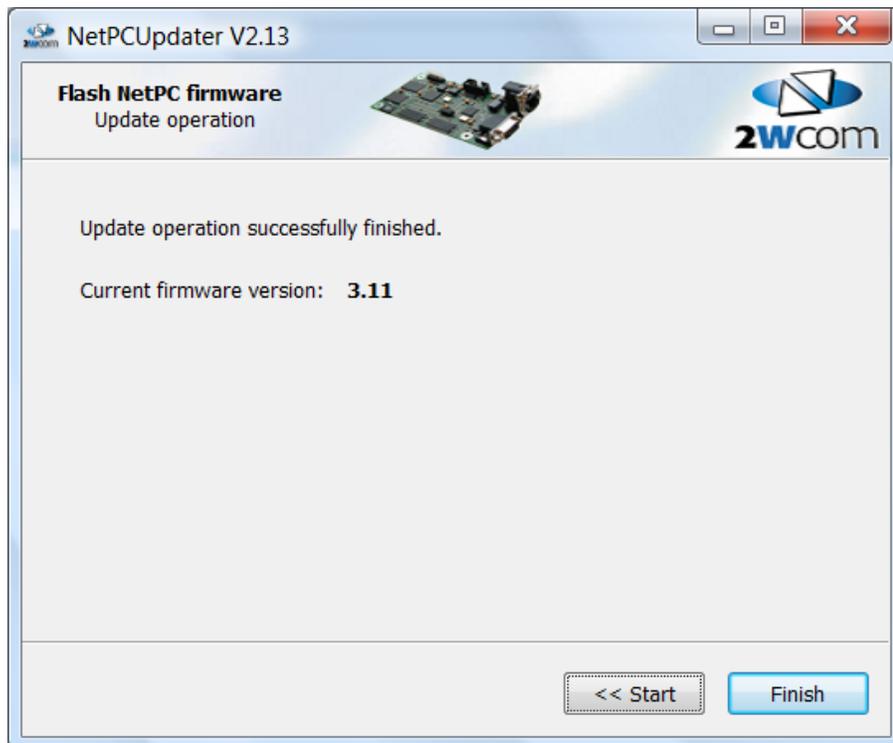
STEP 1: RUN FIRMWARE\NETPC\NETPCUPDATER.EXE

Enter the correct local IP and port - typically 7000





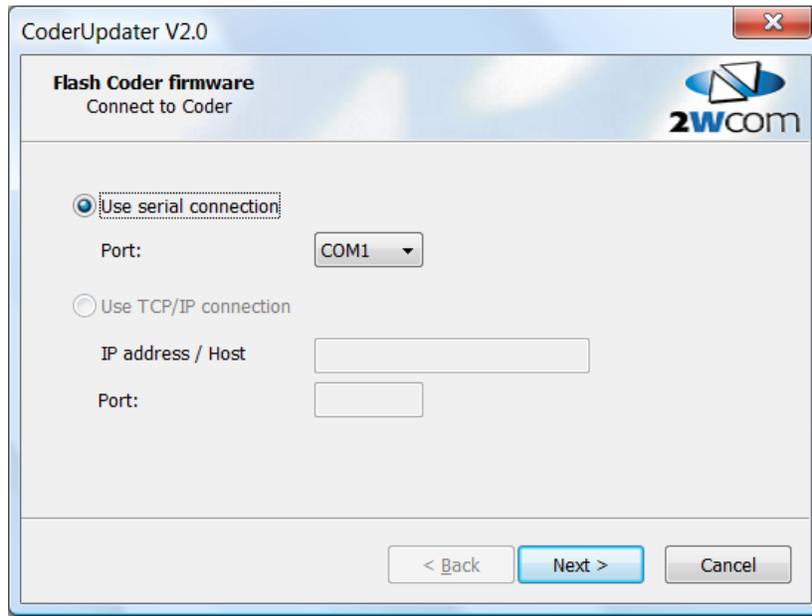
When done click Finish



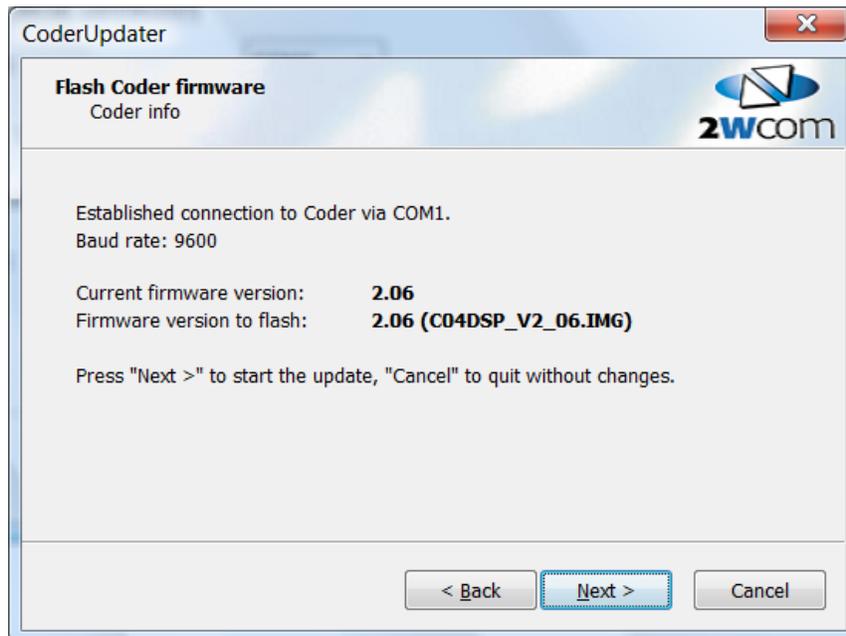
STEP 2: UPDATING ENCODER FIRMWARE

Use supplied Null Modem cable to connect a PC to the FRONT Serial Port.

Run firmware\Encoder Firmware 2.06\ C0XDSP_V2_06.exe and select the correct port for your PC

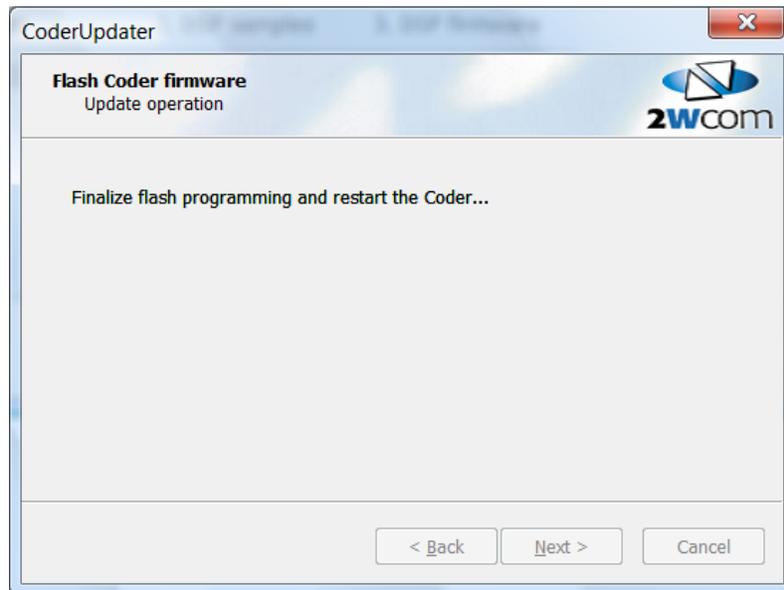
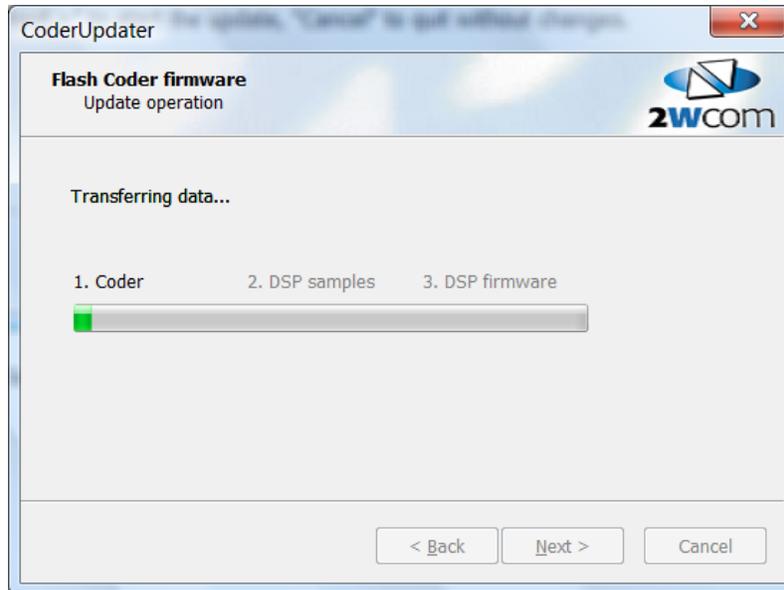


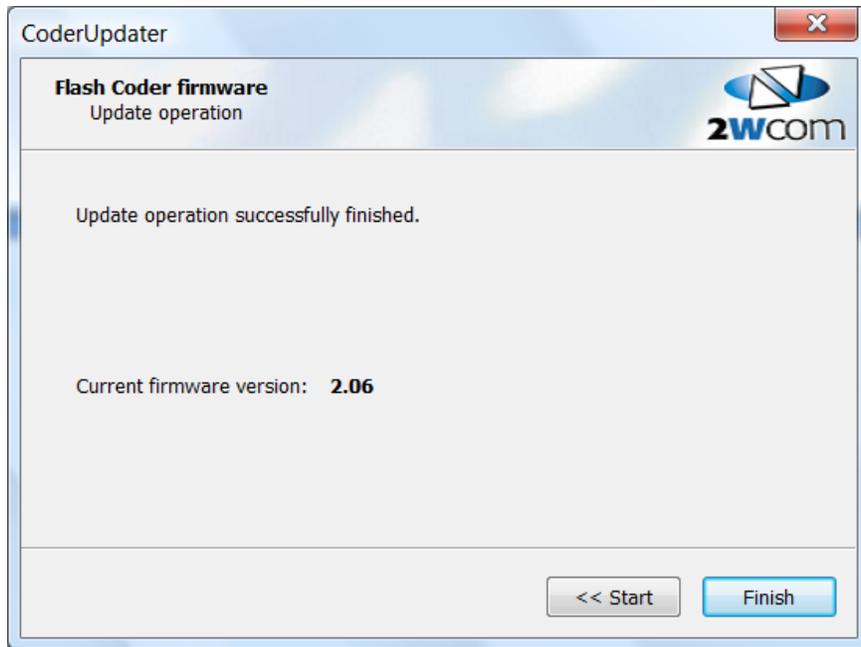
Click Next



Click Next to start the Update

You will see the screen below and the screen on the Encoder will display **Flashing.....**

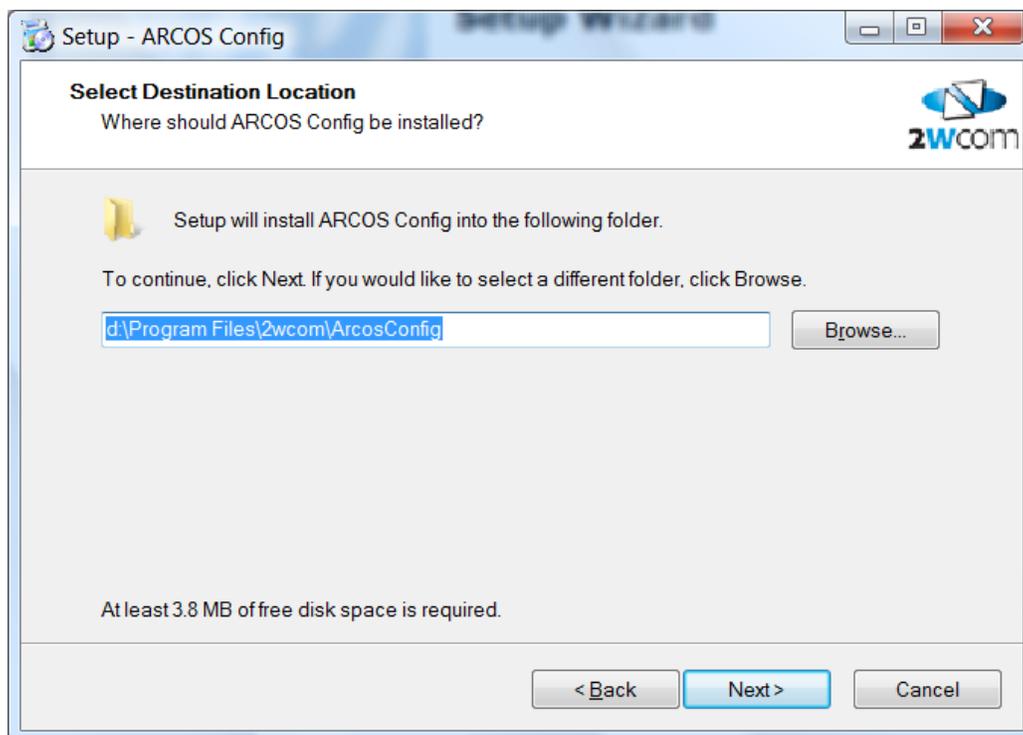




Firmware is now updated and you can disconnect Serial cable from front

STEP 3: UPDATING/ INSTALLING ARCOSCONFIG

On a PC that you want to control the Encoder from, run
ArcosConfigV207\Installer\Setup.exe



Click next a couple of times and you should be finished in a few seconds.



When you reach this screen, click finish and the installation is complete.

CUSTOMER SERVICE

If you need customer service assistance, please contact via Radio's customer service department at 1-877-445-0001 from 8AM to 5PM, Monday through Friday, Eastern Standard Time.