NextGen RF Firmware Upgrade Procedure and Cloning a Viper SC or SC+ Only

!!!!!!!!!!Please Read before upgrading!!!!!!!!

This procedure details how to upgrade *only the Viper SC and Viper SC+* modem and radio firmware. This procedure *cannot be used* to upgrade a *non-Viper SC*. Please refer to the non-Viper SC firmware upgrade procedure. **Damage to a <u>non-Viper SC</u> can occur** if you try to use this procedure and files intended for a Viper SC or SC+.

Home	Unit Status	RF Status	Basic Settings
Unit Identification and Status			
Station Name	NoName		
Model Number	140-5018-502		
LAN IP Address	192.168.205.1		
LAN MAC Address	00:0A:99:80:8E:E4		
Uptime	2:00:23:14		
Modem Firmware Version	NextGenRF Viper (HW:PCB-280-03470) (CodeBase:ipr_3.15_R202104281100_SC_ONLY)		
Unit Status	Ok		
IP Forwarding Mode	Bridge		
Station Mode	Remote		
DC Input Voltage	13.7 V		
Transceiver Temperature	38.0 C		
VPN Status	Not ready, vpn service disabled		
		Refresh	Acknowledge Unit Status

Viper Sc and SC+ Will have *CodeBase:ipr 3.XX_R*

Non-SC Vipers will have *CodeBase:ipr 1.XX_R,* please always double check the version before proceeding.

Note: When upgrading Vipers in a redundant base station always ensure the base station is locked in manual mode so that each Viper can be upgraded one at a time. Failure to put the base station in manual mode may result in a base station switching to the non active Viper during the upgrade procedure causing permanent damage to the Viper being upgrade.

Viper SC and SC+ Firmware Upgrade Procedure

Note: The Viper SC and SC+ has the same procedure and go forwarded in this document will be only referred to as Viper SC.

The Viper SC has an internal file system that the Viper's operating system accesses to display web pages and to perform operational tasks. The Viper's operating system it's self is contained in the Viper's file system. The Viper's firmware can be upgraded by transferring new files in to the Vipers file system. The file transfer protocol (FTP) is used to transfer the files required to upgrade the Viper. A FTP utility must be used to transfer these files to the Viper. Any FTP utility can be used including the Windows DOS FTP

utility, Filezilla, however NextGen RF recommends using FTP Commander. The FTP Commander has a free download on their web site that the user can download.

NextGen RF will provide the user with a firmware upgrade folder that will contain all the files required to upgrade the Viper's firmware. The user should store the upgrade folder to a known location on their PC.

The user must ensure they can connect to the Viper's web pages by either the default Viper LAN IP address of 192.168.205.1 or the current Viper's LAN the user has programmed in.

The user must set their PC Network Interface Card (NIC) up to ensure their PC is on the same subnet.
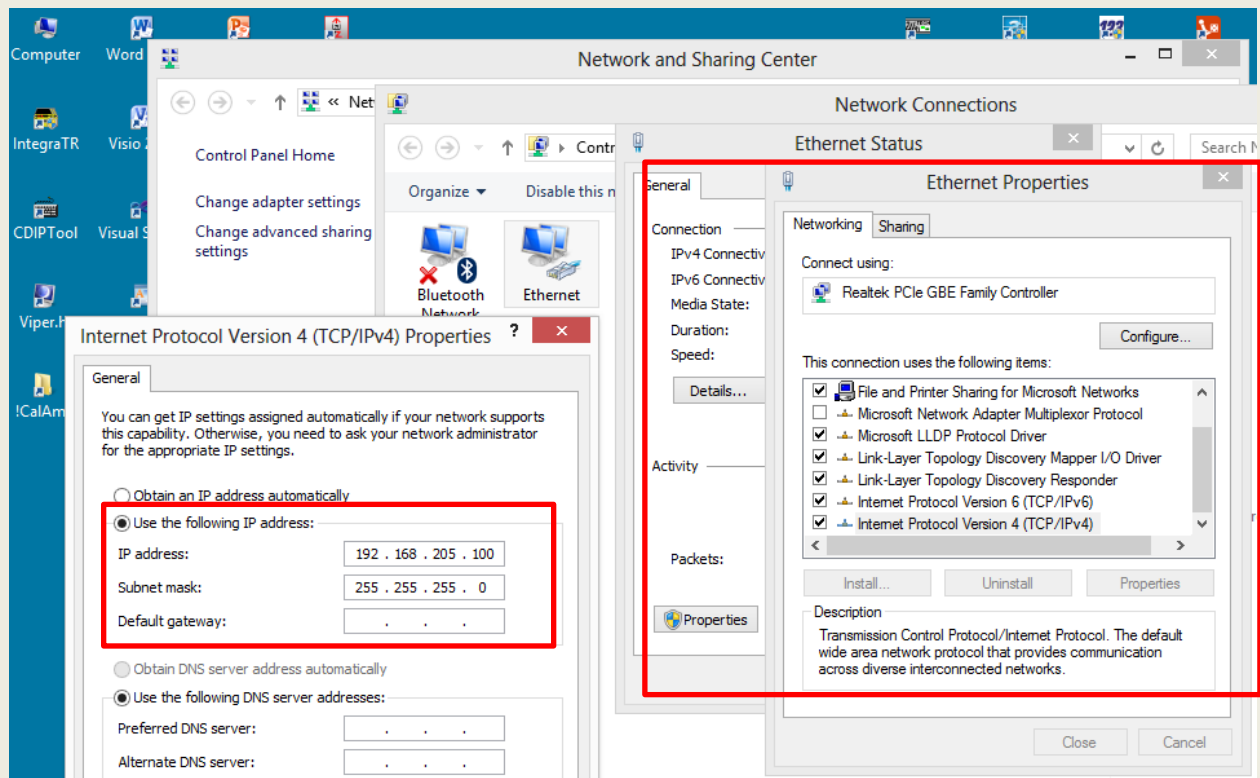
Set the user's PC NIC to the same subnet as the Viper being upgraded.

Once the user can access the Viper's web page start the FTP utility application.
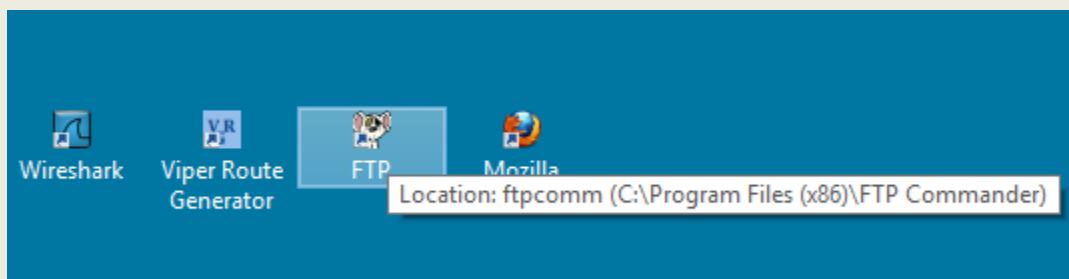
FTP Commander Utility
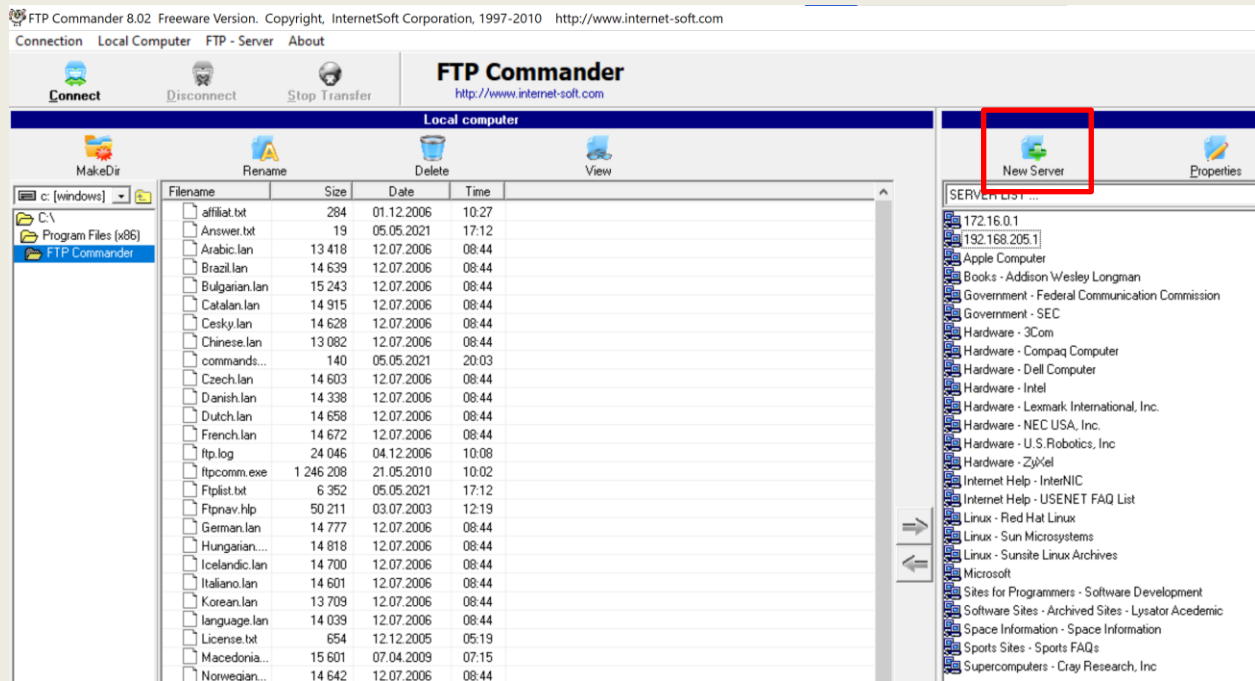
FTP Start UP Screen

Click on the New Server button and enter in the basic information required such as User ID, Password, Name, and FTP Server. The FTP Port number must be 21. In this example, see the below entries. NextGen RF recommends using the FTP Server IP address also as the Name.
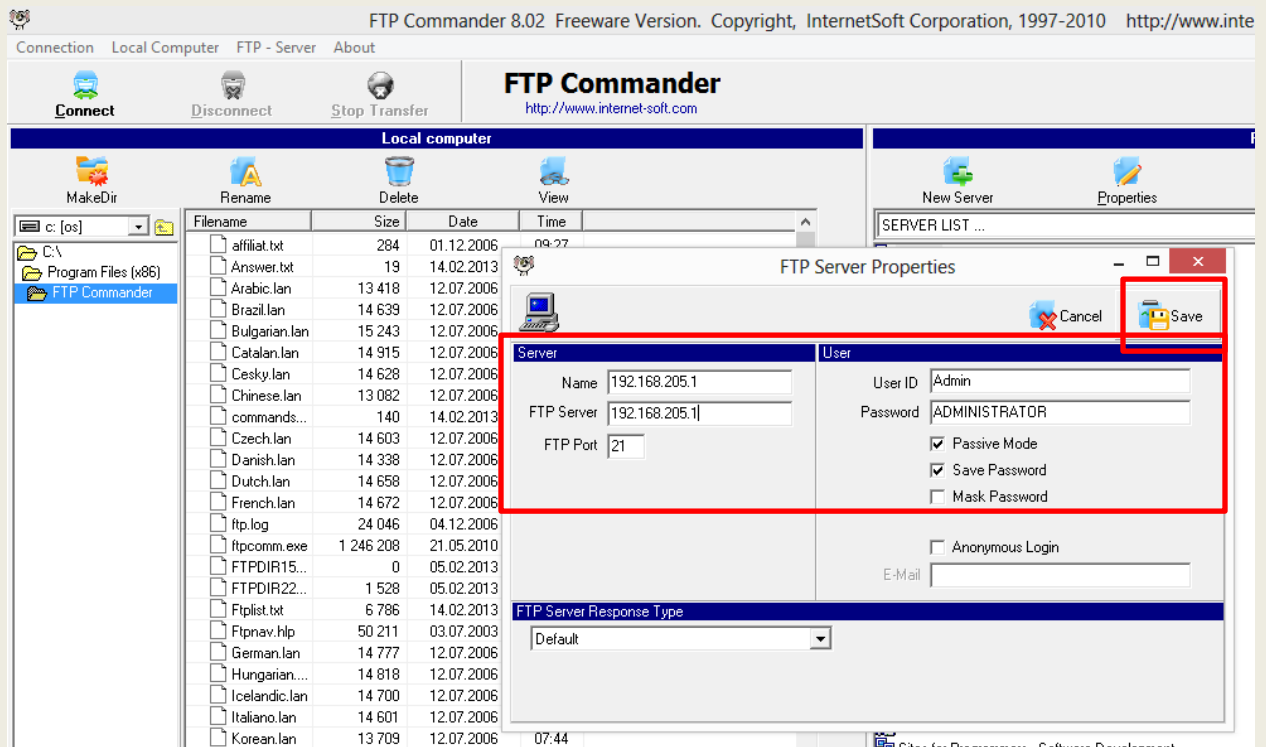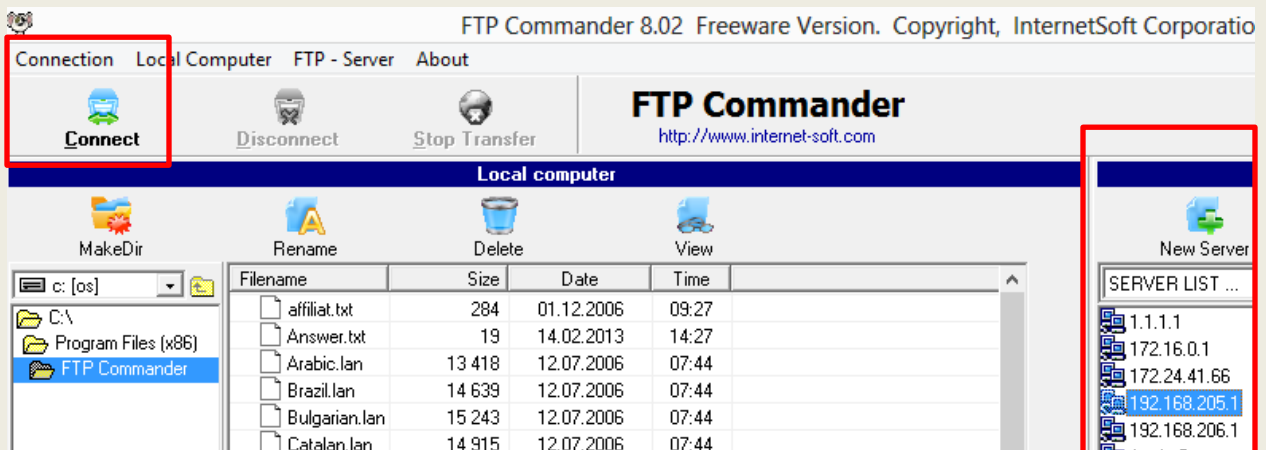
User ID: Admin

Password: ADMINISTRATOR

Name: 192.168.205.1

FTP Server: 192.168.205.1

Then Click the Save button.

This will add a new server to the list to choose from on under the Server List on the right panel. Highlight the new server just added. The user can modified the server properties to upgrade multiple Vipers or just add new servers.


Viper Server 192.168.205.1 Selected

Click on Connect button to read all the files that are currently in the Viper SC. The FTP Commander will try to connect to the Viper SC via the PCs Ethernet LAN 45 connection. The user's PC must be on the same subnet as the Viper SC. In this example the PC's IP LAN connection is 192.168.205.100.

If FTP Commander connects successfully, then the right panel of the FTP utility will be populated with the listing of all the files in the Viper SC.
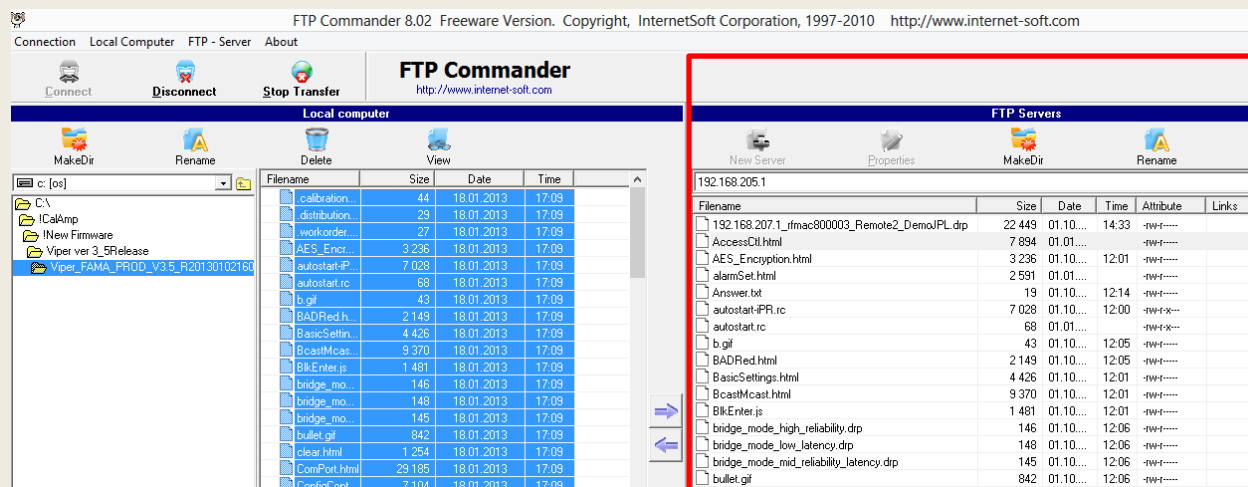

Files in the Viper SC

In this example the Viper's upgrade folder containing all the files to upgrade have been stored on the C:\ drive at the location shown below.
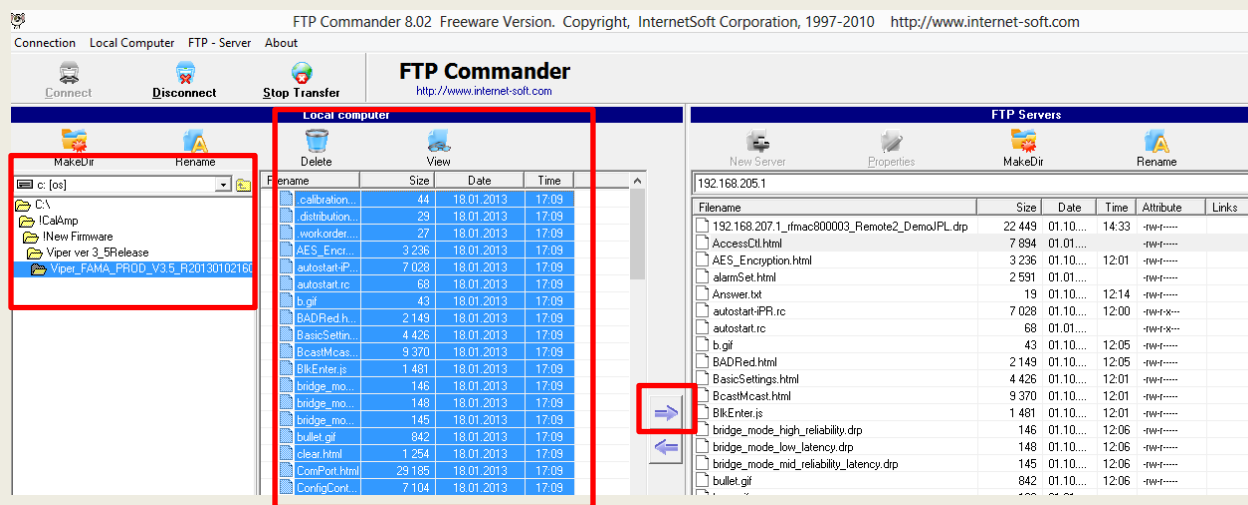

Viper Upgrade Folder Location

Once the folder has been selected, click on a single file then *right click and to select all the files in the upgrade folder sent by NextGen RF*. All the files should be highlighted in the left panel of the FTP utility as shown above. Click on the arrow pointing to the right to start the FTP process as shown above.

The user will be asked to Overwrite all the files. **The user must select all.**
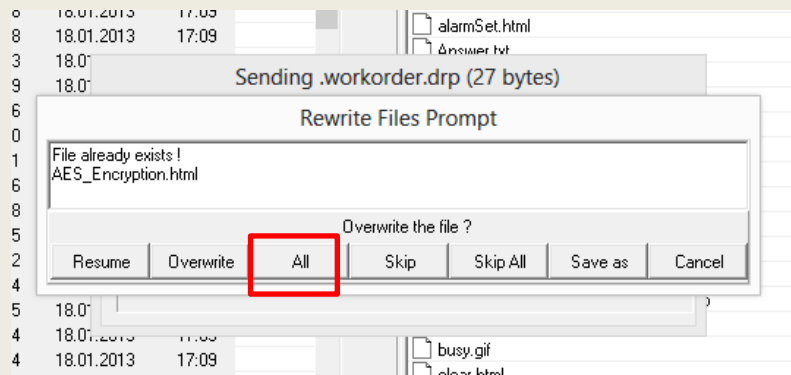
Overwrite All

A progression popup window will show the files being transferred from the PC to the Viper. The transfer takes about 6 minutes to transfer all the files. When all the files have been transferred, the FTP utility will indicate Transfer Complete in the lower left corner of the FTP window.
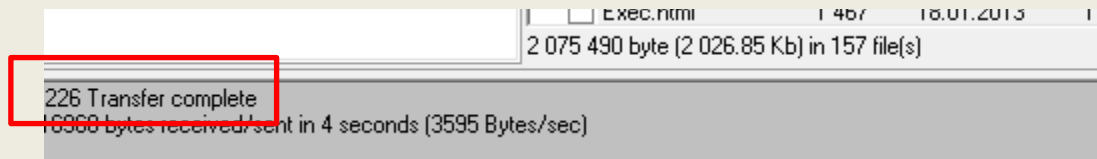
File Transfer Complete

This completes the file transfer. The user must now check the Viper to ensure all the files have been transferred correctly. The user must start up a web browser and navigate to the Device Maintenance page, then to the Package Control tab. The Package Control tab will indicate if a file has failed the file check.

Ensure the Results states Pass before resetting the Viper. Do not reset the Viper until all files have passed.

The Package Control will indicate if a file has failed.

If a file fails the test, then the single file can be transferred again or the entire folder can be transferred again. Once all the files have passed the user must also click on the Radio Firmware Upgrade button to also upgrade the Radio firmware which is different than the Viper's modem firmware. The Radio firmware was contained in the files transferred to the Viper. Sometimes the Radio will not need to be updated but clicking on the Radio Firmware Upgrade button will upgrade the file if need be. The user must *Reset* the Viper to complete the Firmware Upgrade process. Click the Reset button then the Reboot button then the OK to complete the Viper Reset and firmware upgrade process

Cloning A Viper's Configuration file (.drp file)

Sometimes a Viper unit in the field must be replaced. It is possible to transfer it's configuration to the new a new radio. The process is very similar to the firmware upgrade procedure just described. The Viper's configuration file is stored with the file extension **.drp**. In this example the configuration was created by the Viper Route Generator application and stored in a project folder.
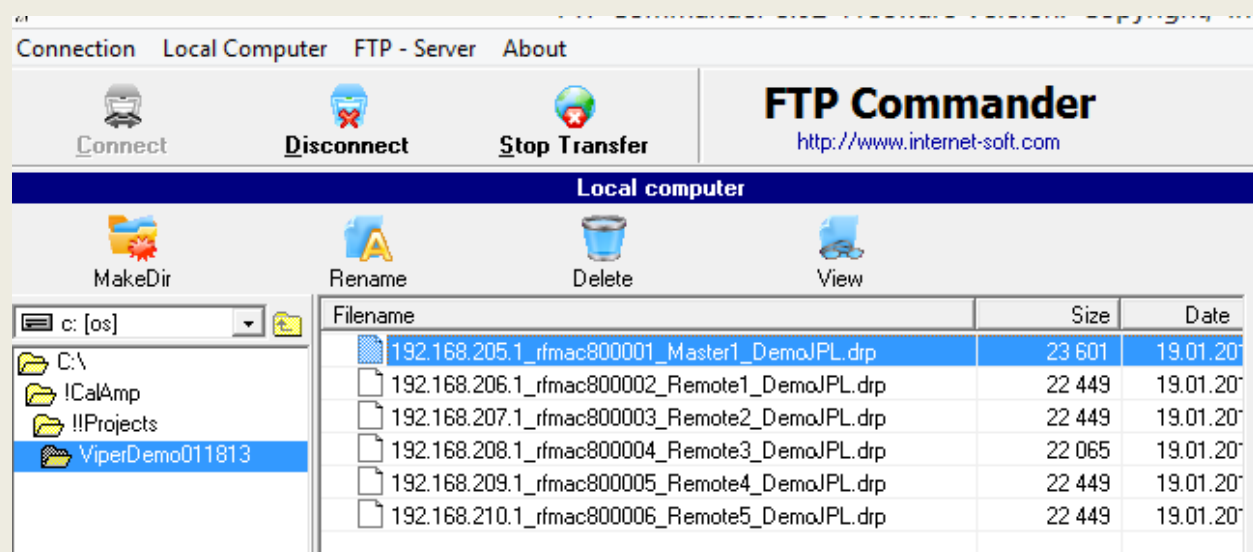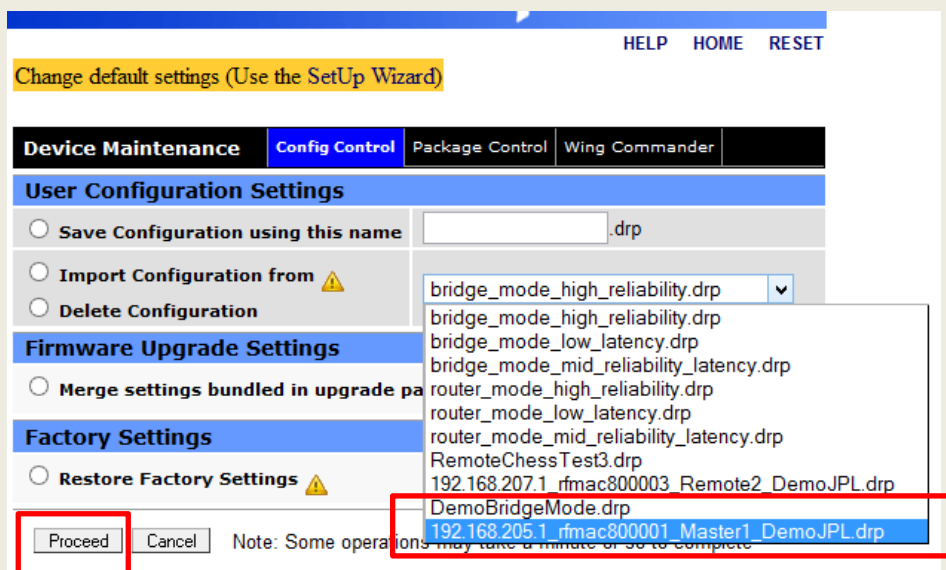

Highlight the desired .drp configuration file to transfer to the Viper

In this example the **192.168.205.1_rfmac800001_Master…** file was selected. Connect to the Viper's files as before by selecting the Vipers Server IP address in the FTP Server list.
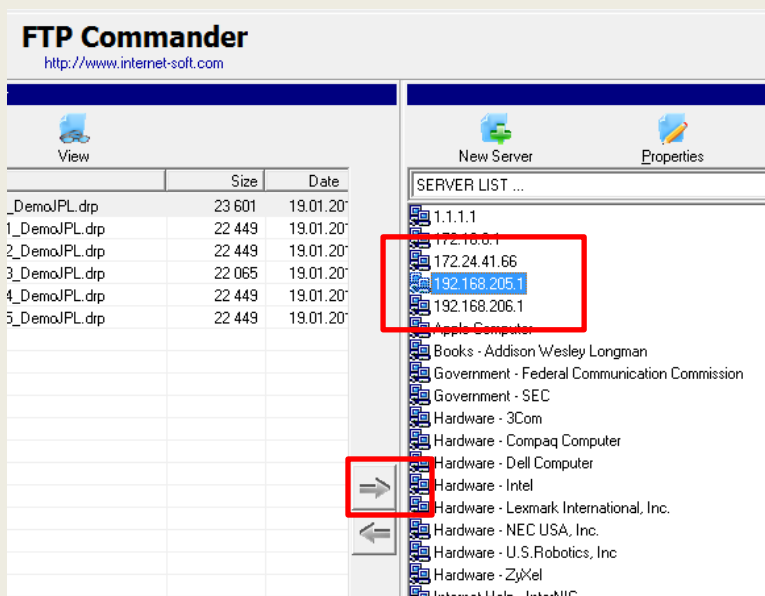

Click on the Right transfer arrow to transfer the single file to the radio. Once the single **.drp** file has been transferred, navigate to the Device Maintenance page again but use the Config Control tab.

In the drop down box select the desired file to import (clone), then click on the Import Configuration from button. Click the Proceed button and this will import the new configuration file to the Viper. The user can now check the new configuration before resetting the Viper. If the configuration is correct, click on the Reset button to complete the clone process. The new configuration will only take affect after resetting the Viper. This completes the cloning process.

Using the DOS FTP Utility to Upgrade the Viper's Firmware

Store the Vipers firmware upgrade folder to a known location. The upgrade files are in the directory shown below.
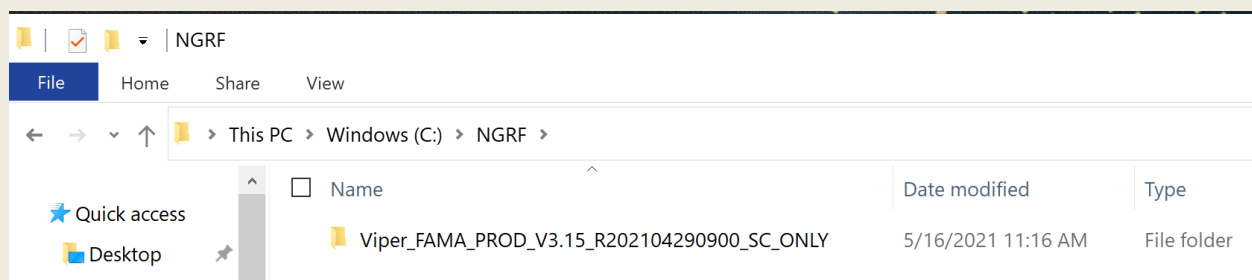
In this example the FTP_Folder directory is used. Use the **CD** command to change to the required directory. The **CD..** commands backs up one directory at a time.

```
C:\NGRF\Viper_FAMA_PROD_V3.15_R202104290900_SC_ONLY>
```

As before ensure your PC's IP address is on the same subnet as the Viper to be upgraded. Refer to the previous procedure if need be.

```
C:\NGRF\Viper_FAMA_PROD_V3.15_R202104290900_SC_ONLY>
```

<div align="center">Change to the desire directories</div>

Start the FTP DOS utility by connecting to the Viper's Ip address:

ftp 192 168.205.1

Enter the user name: **Admin**

And the password of   **ADMINISTRATOR**   to log in to the viper's FTP server.

```
Administrator: Command Prompt - FTP  192.168.205.1

Microsoft Windows [Version 10.0.19042.985]
(c) Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>CD..

C:\Windows>CD..

C:\>CD NGRF

C:\NGRF>CD Viper_FAMA_PROD_V3.15_R202104290900_SC_ONLY

C:\NGRF\Viper_FAMA_PROD_V3.15_R202104290900_SC_ONLY>FTP 192.168.205.1
Connected to 192.168.205.1.
220 NextGenRF Viper FTP Ready
500 Unknown command
User (192.168.205.1:(none)): Admin
331 Password required for Admin
Password:
230 Logged in
ftp> _
```

```
C:\NGRF\Viper_FAMA_PROD_V3.15_R202104290900_SC_ONLY>ftp 192.168.205.1
> ftp: connect :Connection timed out
ftp>
```

Type the following DOS ftp commands to transfer the files to the Viper:

ftp> **prompt** (enter key)

ftp> **hash** (enter key)

ftp> **mput** * (enter key)

```
■■ Administrator: Command Prompt - FTP  192.168.205.1

Microsoft Windows [Version 10.0.19042.985]
(c) Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>CD..

C:\Windows>CD..

C:\>CD NGRF

C:\NGRF>CD Viper_FAMA_PROD_V3.15_R202104290900_SC_ONLY

C:\NGRF\Viper_FAMA_PROD_V3.15_R202104290900_SC_ONLY>FTP 192.168.205.1
Connected to 192.168.205.1.
220 NextGenRF Viper FTP Ready
500 Unknown command
User (192.168.205.1:(none)): Admin
331 Password required for Admin
Password:
230 Logged in
ftp> PROMPT
Interactive mode Off .
ftp> hash
Hash mark printing On  ftp: (2048 bytes/hash mark) .
ftp> mput *
200 Port command okay
150 Opening data connection for STOR command (.calibration.drp)

226-File received OK - 44 bytes in 0.005 sec
   Now writing to flash....
226 File written to flash - 44 bytes in 1.000 sec
ftp: 44 bytes sent in 0.00Seconds 44000.00Kbytes/sec.
200 Port command okay
150 Opening data connection for STOR command (.distribution.drp)

226-File received OK - 29 bytes in 0.000 sec
   Now writing to flash....
226 File written to flash - 29 bytes in 1.000 sec
ftp: 29 bytes sent in 0.00Seconds 29000.00Kbytes/sec.
200 Port command okay
150 Opening data connection for STOR command (.workorder.drp)
```

This will transfer all the files in the **current ftp directory. It is extremely important to have only the Viper firmware files and no other files in this directory.**

Once all the files have been transferred type

ftp> **close** (enter key)

This will close the ftp connection, and then type **quit** to return back to the normal command prompt directory. This completes the DOS FTP procedure.

Ensure that all files have passed as shown below.

Note that this process can also be used to transfer a **single** configuration **.drp** file to clone a Viper as well. Just have only the **single .drp file in the current ftp directory**.

Navigate to the Device Maintenance page. Click on the drop down to display all the current **.drp** configurations currently in the Viper.
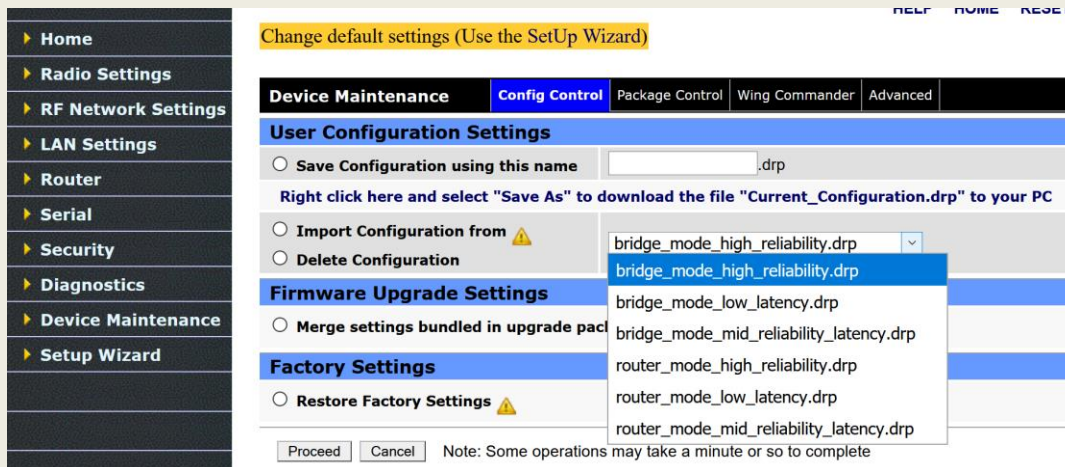
The following example will FTP the "Current_Configuration.drp" file into the Viper using the DOS FTP. Start up the DOS command prompt again and ensure the Current_Configuration.drp file is in the folder you will use as the FTP source. Then login as before with user name Admin and password ADMINISTRATOR.

Simply use the type the command "put Current_Configuration.drp". The DOS FTP will send the file to the Viper but will not import it.

Ensure the file was transferred to the Vipers file system by navigating to the Device Maintenance web page and check the drop down box as shown below.

If the file has been successfully transferred then click the Import Configuration from button then the Proceed then the Reset button.

This will import the configuration selected in the drop down box and complete the import of the .drp configuration file process.