

VIPER RECOVERY PROCEDURE

1. Prepare the computer.
 - a. Disconnect from local networks and domains.
 - b. Set an Ethernet adapter to the following static IP addresses/masks.
 - i. 192.168.205.100 mask 255.255.255.0
 - ii. 192.168.0.100 mask 255.255.255.0
 - c. Copy the directory **Viper FW 3_XX** to your C:\ drive.
 - d. Enable **tftp client** if you have not done so.
 - i. In the search bar, enter **Turn Windows features on or off** and click that tab.
 - ii. Wait for results to show in the window and find **TFTP Client**
 - iii. If the box beside it is not checked, click that box, then click **OK**
2. Connect an Ethernet cable from the computer to the Viper.
3. Connect a serial cable from computer to Viper SETUP port
4. Open ClearTerminal from **Viper FW 3_XX\PROCEDURES**
5. Load **Viper FW 3_XX\PROCEDURES\RecoverTerminalSettings.cts** if you want to avoid having to type all the commands yourself.
6. In ClearTerminal, select **Connection, New Connection**, then click on the serial tab.
 - a. Select the COM port of your serial cable
 - b. 19200 baud
 - c. 8N1
 - d. Click **Connect**
7. When the display page comes up, click on the cursor in the upper left corner. It should be solid white.
8. With the Viper powered off, hold the space key down continuously while powering up the Viper until the following display appears (or similar) then quickly let off.

```
ETH1 00:0A:99:80:0D:5D 192.168.205.2
Enter Code (Terminate with ENTER):
```

9. After this message appears there will be only 10 seconds to enter the word **dataradio**:

```
Enter Code (Terminate with ENTER):
```

```
Enter Code (Terminate with ENTER):      dataradio
```

10. If entrance into monitor mode is successful, you will see the display below. If not, it will be necessary to power the Viper off and try again.

```
Enter Code (Terminate with ENTER):
Entering command mode at user request. Loader not launched.
Current monitor user level: 0
uMON>
```

11. Now enter **ulvl 3** beside the uMON prompt and [ENTER]. Password is **ADMINISTRATOR** and [ENTER]. It is normal that the password doesn't show as it is typed.

```
Enter Code (Terminate with ENTER):          dataradio
Entering command mode at user request. Loader not launched.
Current monitor user level: 0
uMON>ulvl 3
Password:
Current monitor user level: 3
uMON>
```

12. Type **set** and [ENTER]. This will give a whole page of information, but the important thing it will give you is the IP address and net mask set in the radio. This is important to know.

```
IPADD = 192.168.205.1
NETMASK = 255.255.255.0
```

13. Type **vpkg distrib.pkg** and [ENTER]. This will show you a whole list of firmware files along with their status. Watch for file names with FAIL or MISSING beside them.

```
uMON>vpkg distrib.pkg
```

```
FAIL      ipr.bin
PASS      ipr.sum
MISSING   ipr_1.bin
PASS      ipr_1.sum
MISSING   ipr_2.bin
PASS      ipr_2.sum
```

14. There are 4 files are normally missing. Two of those are shown above. The other two are shown below. What is not normal is for ANY of them to show FAIL. If a file shows FAIL, it must be replaced.

```
FAIL      viper_scx.bin
PASS      viper_scx.sum
MISSING   viper_scx_1.bin
PASS      viper_scx_1.sum
MISSING   viper_scx_2.bin
```

15. Make a list of all the files that FAIL or are MISSING. It will be necessary to load and overwrite these from the file cache.

16. Open a command shell and change directory to C:\Viper FW 3_XX>.

17. Ping the radio IP address. In order to repair the firmware package, it is necessary that the ping be successful. It may be necessary to temporarily disable a firewall or other security. Be sure this is re-enabled before connecting to the internet.

```
Pinging 192.168.205.1 with 32 bytes of data:
Reply from 192.168.205.1: bytes=32 time=2ms TTL=64
Reply from 192.168.205.1: bytes=32 time=1ms TTL=64
Reply from 192.168.205.1: bytes=32 time=1ms TTL=64
Reply from 192.168.205.1: bytes=32 time=1ms TTL=64

Ping statistics for 192.168.205.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms
```

18. If the radio is at the default IP address 192.168.205.1, you may reload the entire firmware package. Double click the file within C:\Viper FW 3_XX entitled

NGRF_Recovery_Files_FW_3_XX.bat.

19. If the radio is not at that address, you may transfer the missing and failed files individually. To do this, enter the following text into the command shell followed by the name of the file you wish to transfer. Replace 192.168.205.1 with the IP address of the radio. Press [ENTER] after the file name.

tftp -i 192.168.205.1 put

20. An example is shown below to transfer the file **ipr.bin**.

C:\Viper FW 3_XX>**tftp -i 192.168.205.1 put ipr.bin**

21. Once all the necessary files are transferred, verify the firmware package with ClearTerminal. This is done by typing **vpkg distrib.pkg** in the command line after the uMON> prompt. Press [ENTER]. The following message should be displayed at the end of the string.

```
Package distrib.pkg is valid
uMON>
```

22. Once the package shows verified, close the connection in ClearTerminal then open it again.

23. Power cycle the Viper radio. The radio may take 2 or 3 minutes to reassemble the firmware and defragment the memory. At the end of this process, you should see the display as shown on the following page.

```
reassembling firmware...
:::Checking space left in the filesystem...
:::::used 4724234, free 3205258 (contiguous 2063393, fragmented 1141865)
:::Checking space left in the filesystem done
:::found tfs:viper_scx_1.bin (count 1)
:::found tfs:viper_scx_2.bin (count 2)
:::removing fragments...
:::::removing tfs:viper_scx_1.bin
:::::removing tfs:viper_scx_2.bin
:::removing fragments done
:::reassembly success
:::fragments read = 2
:::read success = 1141669
:::write error = 0
:::write success = 1141669
:::found tfs:ipr_1.bin (count 1)
:::found tfs:ipr_2.bin (count 2)
:::removing fragments...
:::::removing tfs:ipr_1.bin
:::::removing tfs:ipr_2.bin
:::removing fragments done
:::reassembly success
:::fragments read = 2
:::read success = 1128783
:::write error = 0
:::write success = 1128783
reassembling firmware done
```

24. Once you see **reassembling firmware done**, the radio should operate properly after a power cycle. If it still does not operate, call your distributor or NextGen for further support.