

**Inmarsat Fleet F77 802.11x Solution**

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## 1. INTRODUCTION:

Enjoy the benefit of Wireless LAN with your Nera Fleet F77. Access your Fleet F77 MPDS and ISDN without laying any wires and drilling any holes. This wireless solution provides adequate bandwidth for most common LAN applications. It also allows you to quickly expand your network on board the vessel by adding additional Access Points.

In Evaluating Wireless LAN, it is important to consider:

1. Range coverage, open access, metal etc
2. Compatibility with existing LANs
3. Interference with other RF equipment





Contact:

Inmarsat – Satellite Operator  
[www.inmarsat.com](http://www.inmarsat.com)

Fleet F77 – Satellite Terminal  
[www.nera.no](http://www.nera.no)

Orinoco/Proxim WLAN cards  
<http://www.proxim.com>

SMC- Wireless Router  
[www.smc.com](http://www.smc.com)

<b>Hardware Pre-requisites -</b>		
SMC Wireless Router	SMC7004A7BR	
Inmarsat F77	Nera Fleet 77 Satcom	
Orinoco WLAN 802.11xCard		
9 Pin Serial/RS232 Cable		
<b>Software Pre-requisites</b>		
Internet Explorer	To interface with Router	<a href="http://www.microsoft.com/windows/ie">http://www.microsoft.com/windows/ie</a>
New SMC Firmware	Check SMC website	<a href="http://www.smc.com">www.smc.com</a>
ISDN & MPDS Dial-up details	Check Nera user guide	<a href="http://www.nera.no">www.nera.no</a>

### **Testing Specification:**

SMC firmware used	– R196h3
Nera F77 Firmware	– Rel2.OT15, 14 JULY 2003-10-16
CTRL SW	– 101476 VERSION: 2.0, 05-JUNE 2003-10-16
Wireless PC Card Type II	– Orinoco Gold Card
PC Card firmware	– version 4.0
Lucent Client manager	– version 2.58
Driver	– NDIS 5 miniport driver version 7.42
PC	– IBM T21
Operating System	– Windows 2000 Professional

## **BEFORE YOU START:**

### **Configuring Fleet F77:**

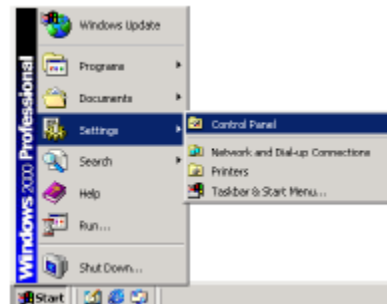
“Please ensure that the modem dial up networking profiles for accessing the Internet via MPDS and ISDN are configured according to your Nera F77 user guide”

This is outside the scope of this document to cover Fleet F77 set-up.

### **Configuring your PC for SMC:**

“Please ensure you follow SMC user guide for full set-up details. Following points only cover basic settings to set-up SMC on your Windows 2000 PC.

1. Connect an Ethernet cable from your PC's Ethernet port to one of the LAN port on SMC router (your SMC has 4 wired 10/100 TBASE ports). Make sure your SMC is switched on.
2. From the Windows desktop, click the Start button. Choose Settings, then Network and Dial-up Connections .



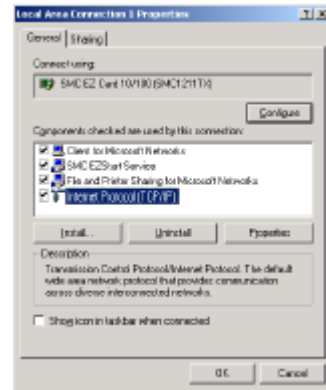
3. Double click the icon that corresponds to your network connection to SMC



4. Click Properties



5. Double-click "Internet Protocol (TCP/IP)."
6. Select "Obtain an IP address automatically" and then select "Obtain DNS server address automatically." Then click "OK." Click "OK".
7. Now reboot your SMC and wait till you see Live network connection on your PC.



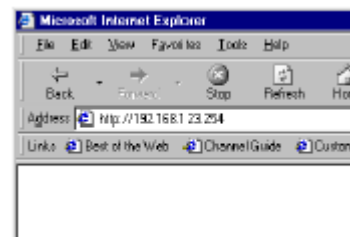
8. Now open your web browser and make sure you are not using any proxy. Proxy settings can be found for Internet Explorer in Tools\Internet Options\Connections\LAN Settings.

### **Configuring your SMC: (Connect your 9 Pin serial/RS232 cable First)**

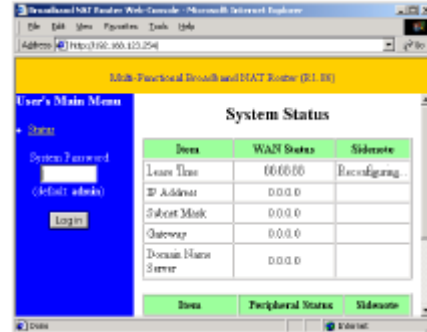
1. First connect one end of 9 Pin Serial Cable to SMC serial port and other to your Nera Fleet F77 serial port. Please see Nera user guide to configure your Nera serial port for ISDN and MPDS dial-up.



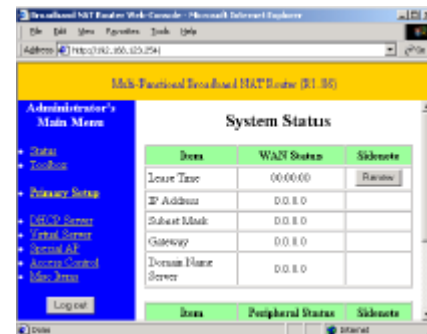
2. Open your web browser and type in the Address field <http://192.168.123.254> and press <Enter>



3. If your PC has acquired a successful network connection from your SMC, you will now be presented with the System Status page. Type your
4. Default password (admin) in the system password field and click Log In



5. Click on Primary Set-up



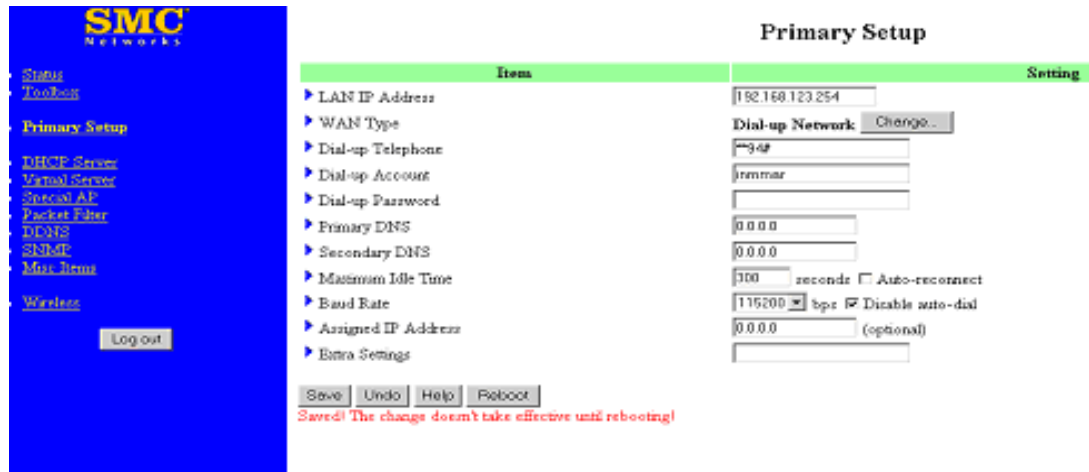
6. Under WAN Type click the Change button.



7. Select Dial-Up Network and click the Save button.



- Now enter your dial –up details here for Fleet F77 ISDN and MPDS connection. Keep your LAN IP unchanged and enter your details as follows.



The screenshot shows the SMC Network Primary Setup configuration page. The left sidebar contains navigation links: Home, Tools, Primary Setup, DHCP Server, Virtual Server, Special AP, Packet Filter, DNS, SNMP, Misc Items, and Wireless. The main content area is titled 'Primary Setup' and contains a table with the following items and settings:

Item	Setting
LAN IP Address	192.168.123.254
WAN Type	Dial-up Network: Change..
Dial-up Telephone	**94#
Dial-up Account	inmar
Dial-up Password	
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0
Maximum Idle Time	100 seconds <input type="checkbox"/> Auto-reconnect
Baud Rate	115200 bps <input checked="" type="checkbox"/> Disable auto-dial
Assigned IP Address	0.0.0.0 (optional)
Extra Settings	

Buttons at the bottom: Save, Undo, Help, Reboot. A red message below the buttons reads: 'Saved! The change doesn't take effective until rebooting!'

- To Make MPDS call enter **\*\*94#** in the Dial-up Telephone field.
- To make ISDN call enter **28#** (LESO ISDN connectivity) or your own ISP ISDN phone number here with # at the end.
- In the dial-up account field enter your LESO specific account details (Username and password) or leave it blank
- In Primary and Secondary DNS field you can define your own DNS settings or enter 0.0.0.0 to automatically obtain from the LESO/ISP on successful MPDS or ISDN connection.
- Remember to **“unchecked”** Auto-Reconnect box, this will disable auto redialling to ISDN and MPDS connection.
- Set your baud rate to 115200 and **“check”** Disable Auto-Dial option.
- Leave your Extra Settings field blank
- Click the Save button and Reboot your SMC.
- Once your SMC is rebooted, you can now connect to Inmarsat Fleet ISDN and MPDS service just by changing the phone numbers on this page.
- Click on Status and you are now ready to dial Fleet ISDN or MPDS connection from your own PC, your SMC router will dial and connect to Inmarsat ISDN and MPDS service, Click on Dial-up button to make your connection.





### System Status

Item	WAN Status	SideNote
IP Address	0.0.0.0	Dial-up IP
Subnet Mask	0.0.0.0	
Gateway	0.0.0.0	
Domain Name Server	158.152.1.48, 152.158.1.48	
Connection Time	-	

Item	Peripheral Status	SideNote
Dial-up Modem	Ready	<input type="button" value="Dial-up"/>
Printer	Not ready	

Help Refresh Display time: 15 October 2003 16:07:46

19. Once connected your status will change to Connected and you can disconnect your Fleet ISDN or MPDS session by clicking the Hang-Up button.



### System Status

Item	WAN Status	SideNote
IP Address	148.122.180.106	Dial-up IP
Subnet Mask	255.255.255.255	
Gateway	148.122.180.106	
Domain Name Server	148.122.180.66, 148.122.208.99	
Connection Time	00:00:00	

Item	Peripheral Status	SideNote
Dial-up Modem	CONNECT 64000	<input type="button" value="Hang-up"/>
Printer	Not ready	

Help Refresh Display time: 16 October 2003 14:19:26

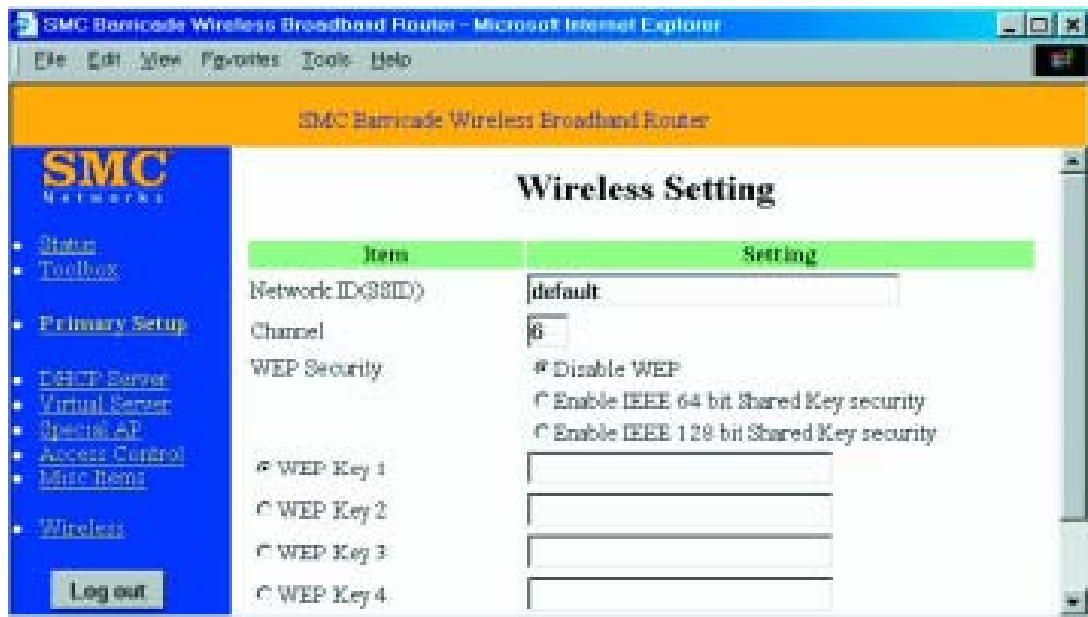
20. You have successfully configured your SMC router to make ISDN or MPDS call by using wired Ethernet connection.

### **Configuring Wireless settings for SMC:**

(Use your Wired connection to configure your wireless settings)

Wireless settings allow you to set SMC for wireless Fleet ISDN and MPDS dial-up. SMC wireless configuration can be done using your wired Ethernet connection to SMC. Following items are required before you can make successful wireless connection to SMC.

- a. Wireless 802.11x PC Card. Use your Orinoco PC card installation CD for setting up Wireless LAN card on your PC. This document only cover SMC wireless set-up.



1. To set-up your SMC Wireless settings go to <http://192.168.123.254> and click on Wireless option.
2. Network ID – Give your wireless network a name, used to identify your SMC Wireless LAN (WLAN) from any PC that have the same Network ID under wireless LAN card setting (the factory setting is default).
3. Channel – The radio channel number. The permissible number of channels depends on the regulatory domain. The factory setting is as follows: Channel 6 for North America; Channel 7 for European & Japan. Your Wireless PC card will automatically pick up your broadcasting channel.
4. WEP Security – Privacy is very Important on Wireless LAN, anybody can access your un-secure Wireless LAN. Select the IEEE data privacy algorithm you want. Enabling the security can protect your data while it is transferred from your PC to SMC. This WEP key will be required when any wireless user attempt to use your SMC router for dialling Fleet ISDN and MPDS connection.
5. WEP Key 1,2,3 &4 – You can define various WEP Keys (random numeric), depending upon how secure you wanted to be your network.
6. You need to use same WEP keys, if enable, in your PC card client settings to make a successful wireless connection.
7. Now click on Save and reboot your SMC.
8. Now disconnect your wired Ethernet connection from SMC.

## Configuring Orinoco PC Card:

(Please follow your Orinoco PC card manufacturer CD-Rom for full set-up).

The following items will be required when setting up your PC card on your PC.

- a. Wireless Network ID from SMC
- b. WEP Key, if enabled in SMC wireless settings

You have now successfully configured your SMC router to make wireless Fleet ISDN and MPDS calls from your PC.

## Confirm your IP settings:

To confirm you have obtained correct IP address, using your Wireless LAN card, go to Start\Run and type cmd.

In the command prompt window, type ipconfig/all to view your IP settings.

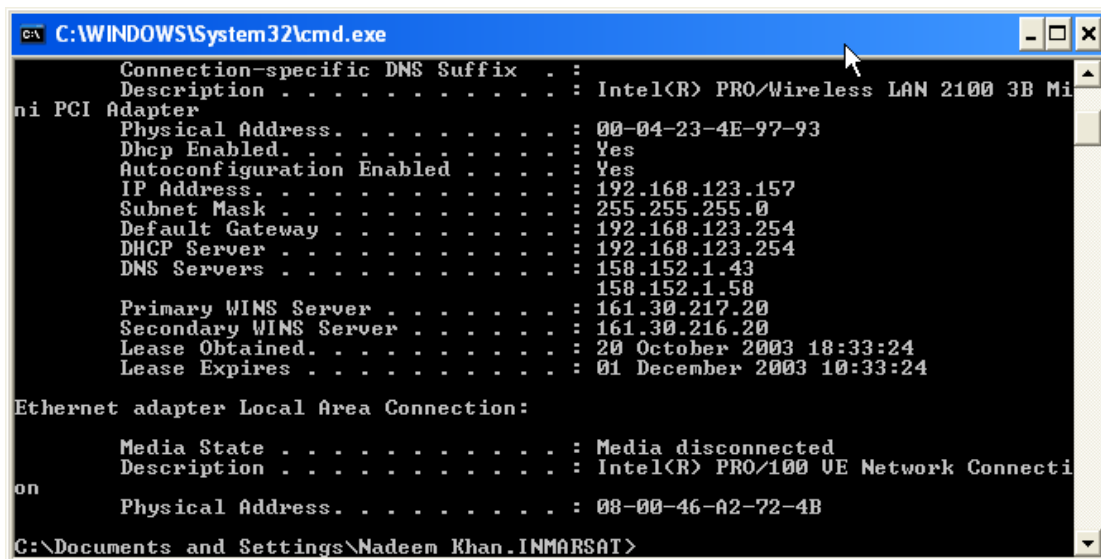


```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Nadeem Khan\INMARSAT>ipconfig/all
```

Check following to confirm your IP settings:

- a. Your IP address begins with 192.168.123.xxx and
- b. Your Default Gateway is 192.168.123.254



```
C:\WINDOWS\system32\cmd.exe

Connection-specific DNS Suffix . : 
Description . . . . . : Intel(R) PRO/Wireless LAN 2100 3B Mini PCI Adapter
Physical Address. . . . . : 00-04-23-4E-97-93
Dhcp Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
IP Address. . . . . : 192.168.123.157
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.123.254
DHCP Server . . . . . : 192.168.123.254
DNS Servers . . . . . : 158.152.1.43
                        158.152.1.58
Primary WINS Server . . . . . : 161.30.217.20
Secondary WINS Server . . . . . : 161.30.216.20
Lease Obtained. . . . . : 20 October 2003 18:33:24
Lease Expires . . . . . : 01 December 2003 10:33:24

Ethernet adapter Local Area Connection:

Media State . . . . . : Media disconnected
Description . . . . . : Intel(R) PRO/100 VE Network Connection
Physical Address. . . . . : 08-00-46-A2-72-4B

C:\Documents and Settings\Nadeem Khan\INMARSAT>
```

To make ISDN or MPDS calls using your SMC router, open your browser and go to <http://192.168.123.254> and click on Dial-up. It is important to check

