

Ethernet User Guide

EXPLORER[®] 110

Introduction:

This document describes how to use the WEB MMI and how to set up data connections on EXPLORER[®] 110 (Nera WorldPro1010)
For terminals with software version 2.10.0 or later.

Typical User:

All users connected via the Ethernet interface.

Links:

If you experience problems with any aspect of the BGAN service, or with the EXPLORER 110 terminal, please contact your supplier for support.

Inmarsat BGAN support and information about BGAN Distribution partners can be found at this web site:

<http://broadband.inmarsat.com/support>

Latest manuals, application notes and software can be download from this web site:

- ▶ <http://www.thrane.com> or
- ▶ <http://extranet.thrane.com> (password required)

Table of Contents:

| | |
|--|-----------|
| 1. INTRODUCTION | 3 |
| 2. REGISTER WITH SATELITTE NETWORK..... | 3 |
| 3. DYNAMIC IP ADDRESS SUBSCRIPTIONS..... | 4 |
| 3.1 <i>Set up and use of a single PC for data communication.....</i> | <i>4</i> |
| 3.2 <i>Advanced Data Connection Settings.....</i> | <i>4</i> |
| 4. STATIC IP ADDRESS SUBSCRIPTION..... | 7 |
| 4.1 <i>Setting up the PC.....</i> | <i>7</i> |
| 4.2 <i>Setting up EXPLORER 110.....</i> | <i>8</i> |
| 5. MULTIPLE USERS..... | 10 |
| 5.1 <i>Using a router.....</i> | <i>10</i> |
| 5.2 <i>Using an Ethernet switch.....</i> | <i>11</i> |
| 6. CONTACT LIST | 12 |
| 7. TEXT MESSAGES (SMS)..... | 13 |
| 8. BLUETOOTH..... | 13 |
| 8.1 <i>Data traffic from a PC and dialling from a BlueTooth handset (Tenovis).....</i> | <i>13</i> |
| 8.2 <i>Dialling from a BlueTooth headset.....</i> | <i>14</i> |
| 9. SETTINGS - GENERAL | 15 |
| 10. SETTINGS - ETHERNET | 16 |
| 11. REMOTE CONTROL OF DATA CONNECTIONS BY SMS..... | 16 |
| 12. SOFTWARE UPGRADE FOR EXPLORER 110 VIA ETHERNET | 18 |
| 13. SOFTWARE UPGRADE FOR EXPLORER ISDN HANDSET | 18 |
| 14. LAUNCHPAD..... | 18 |
| 15. POWER SAVE..... | 19 |
| 16. TROUBLESHOOTING | 19 |
| 16.1 <i>Local connectivity.....</i> | <i>19</i> |
| 16.2 <i>Internet access.....</i> | <i>21</i> |

1. INTRODUCTION

The EXPLORER 110 satellite terminal provides an Ethernet interface which can be used for data communications as well as a Web interface for configuration of the terminal. This user guide describes how to set up data communications via Ethernet and the various features of the Web interface.

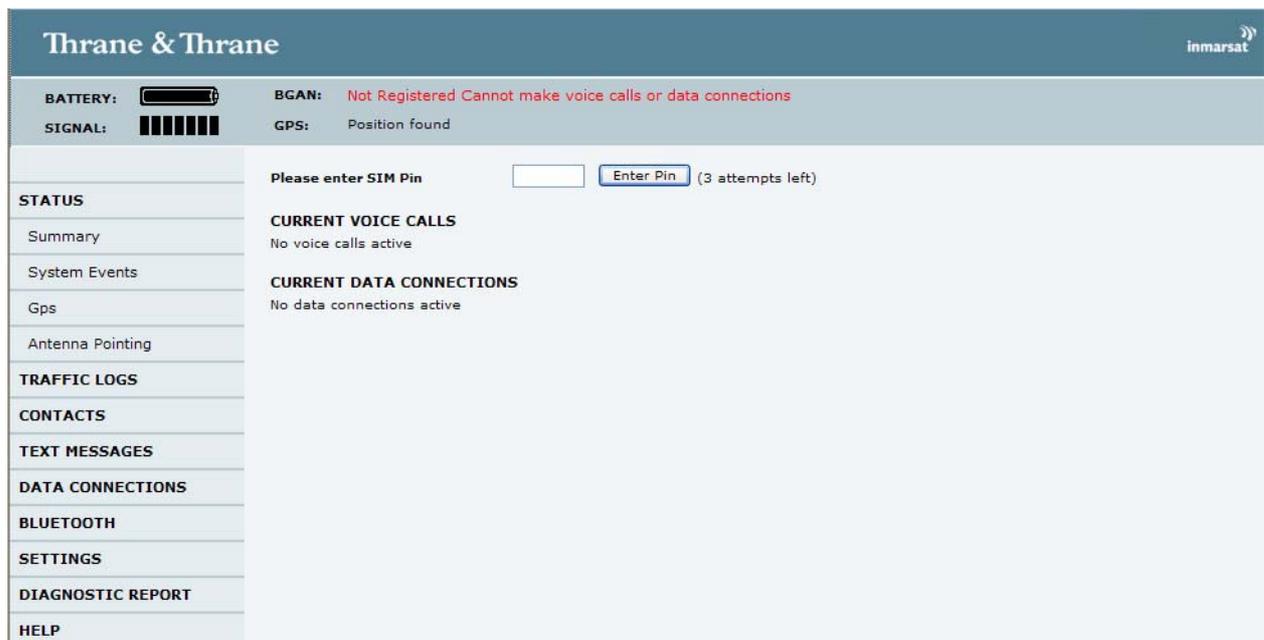
The terminal supports both dynamic and static IP address subscriptions. Setup and usage is different for these two categories so keep this in mind when proceeding.

The different field names in the Web interface are in most cases self explanatory. By keeping the cursor over a field name an additional help text will pop up. However, this might not be valid for all fields.

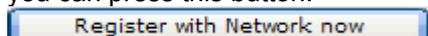
2. REGISTER WITH SATELITE NETWORK

The EXPLORER 110 can be started up as described in the EXPLORER 110 Quick Start by using the EXPLORER ISDN Handset and the *Activate* button, or by using the web MMI:

1. Power up the EXPLORER 110 and align the antenna against the possible satellite signal, as described in the EXPLORER 110 Quick Start.
2. Connect your PC to the EXPLORER 110 to via the Ethernet cable.
3. Enter the EXPLORER 110's default IP address 192.168.0.1 into your Web browsers address line and the *Status Summary* page will be shown:
- 4.



5. Enter the SIM PIN code and press the *Enter Pin* button.
(The SIM PIN lock can be disabled under the *Settings – Locks* menu.)
6. When the GPS position is found by the terminal, the *Register with Network now* button will appear and you can press this button.



(This is equivalent with pressing the *Activate* button on the terminal.)

After the registering process is completed the BGAN status field shows:
Ready for voice calls and data connections

3. DYNAMIC IP ADDRESS SUBSCRIPTIONS

3.1 Set up and use of a single PC for data communication

Using the EXPLORER 110 for a single PC requires no extra setup actions. When the terminal is registered to the Inmarsat network as described in the previous section, **a data connection will automatically be established via the satellite network.**

1. If not already done, log EXPLORER 110 on to the satellite network as described in section 2.
2. When the PC is connected to EXPLORER 110 via an Ethernet cable, the PC will first make a connection against EXPLORER 110 and then also against the satellite network.
During this process the PC will inform you of LAN status changes a couple of times. The time from network registration to a data connection is available via the satellite may take up to 1 minute.

The PC is now ready for data traffic via the satellite network!

You may control the data connection simply by disconnecting and connecting the Ethernet cable.



If the data connection is not automatically established, please see section 16 *Troubleshooting*.

3.2 Advanced Data Connection Settings

EXPLORER 110 will automatically set up a standard data connection via the satellite when you connect a PC to the Ethernet interface. By the Web interface supported on the EXPLORER 110 you may change the data connection behaviour, quality of service and other settings.

1. Set up the EXPLORER 110 as described in section 2.
2. Select the *Data Connections* menu item on the web MMI page. You may store three different data connection configurations: *Normal*, *Alternative1* and *Alternative2*. For most cases only one configuration (*Normal*) should be sufficient.
The different data connection settings are explained below.

Connection type:

Options are

| | |
|-------------------------|---|
| <i>Standard</i> | Varying bit rate dependent on available resources. Tariff based on data volume. |
| <i>Streaming 32kbps</i> | Guaranteed bit rate. Time based tariff. |
| <i>Streaming 64kbps</i> | Guaranteed bit rate. Time based tariff. |

SIM Access Provider Name (APN)

The Access Point Name shown is that which has been read from your SIM card.

User defined APN

If your subscription details show a different APN from the SIM APN then this should be entered in this field, and the *Apply User defined APN* tickbox should be checked.

Username

In most cases this field should be blank for dynamic IP subscriptions.
If your subscription details requires a username this should be entered here.

Password

In most cases this field should be blank for dynamic IP subscriptions.
If your subscription details requires a username this should be entered here.

Send static IP address to network

This field shall be set to 0 0 0 0 for dynamic IP subscriptions.

Data connection activation

There are four different options on how the EXPLORER 110 shall establish and exit a data connection against the satellite. Any configuration changes must be stored and require power down/up to become valid:

Manual:

The data connection is controlled manually by the *Connect / Disconnect* button on the bottom of the window.

Automatic when any PC is connected to EXPLORER 110 (default option)

The data connection will be established automatically when any PC is connected to EXPLORER 110 via the Ethernet interface and EXPLORER 110 is registered to the satellite network, e.g. by pressing the *Activate* button.

If the PC is disconnected, disables its Ethernet interface due to power save mode or turned off or if EXPLORER 110 loses connection with the satellite, the data connection will be automatically taken down.

Automatic when a specific PC is connected

The data connection will be established automatically when a specific computer is connected to EXPLORER 110 and the satellite terminal is registered to the satellite network, e.g. by pressing the *Activate* button.

The actual computer is specified by entering its Computer Name (PC), Client ID (Mac) or hardware MAC address into the data field. This information is found by:

PC: Control Panel (classic view) – System Properties – Computer Name – Full computer name

Mac: System preferences – Internet & NetWork – Network – Built-in Ethernet – TCP/IP – Using DHCP – DHCP Client ID. (this is usually blank but you may enter a name here)

When specifying the computer by the hardware MAC address, the annotation should be like the following example: 00:16:cb:d0:fe:eb

Automatic when a static IP address PC is connected to EXPLORER 110

This option is not applicable for dynamic IP subscriptions.

Connection status

Current status of the connection against the satellite network.

The states are *Not connected*, *connecting* and *connected*.

IP Address for connected PC

For dynamic IP address subscriptions the PC will be assigned a local address when EXPLORER 110 is not connected to the satellite network. The local address will by default be in the range above 192.168.0.100.

When the data connection is established via the satellite the IP address of the PC will be assigned from the satellite network.

Network assigned IP address

The *Network assigned IP address* shall be equal to the *IP Address for connected PC* when the connection status is *Connected*. When EXPLORER 110 is not connected, this field will be blank.

If the addresses are different the PC will not get access to the satellite network. This is described in section 16 *Trouble shooting*.

Status Information Refresh status

| | |
|-----------------------------|----------------|
| Connection Status | Connected |
| IP address for connected PC | 161.30.180.234 |
| Network assigned IP address | 161.30.180.234 |

Connected

Changes only take effect from the next data connection

Store settings Disconnect

4. STATIC IP ADDRESS SUBSCRIPTION

If you are using a subscription with a static IP address you have to set up the PC with the IP address following the subscription and change the settings of EXPLORER 110.

Before proceeding further with the setup the following information should be available

- The APN, username and password for your data connection.
- The static IP address that will be used for data traffic
- DNS server addresses

The information will often be provided along with your subscription details and SIM card.

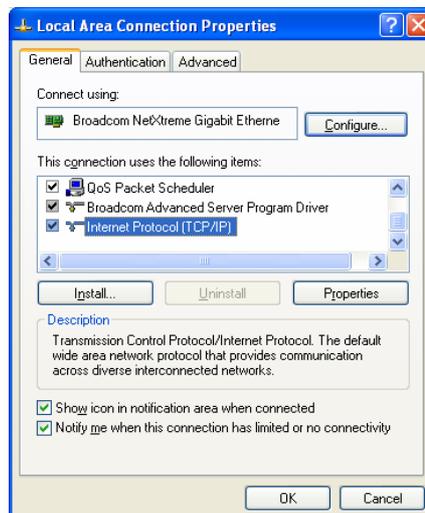
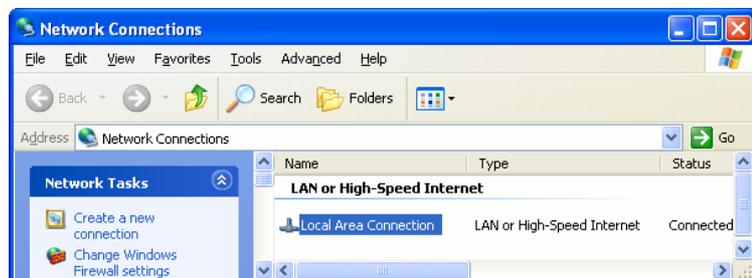
Example settings:

Username: user1
 Password: verysecret
 APN: BGAN.INMARSAT.COM
 IP address: 191.161.30.192
 DNS Address 1: 172.30.33.7
 DNS Address 2: 171.30.7.7

If no APN value is given then the default value from your SIM card will be used automatically.

4.1 Setting up the PC

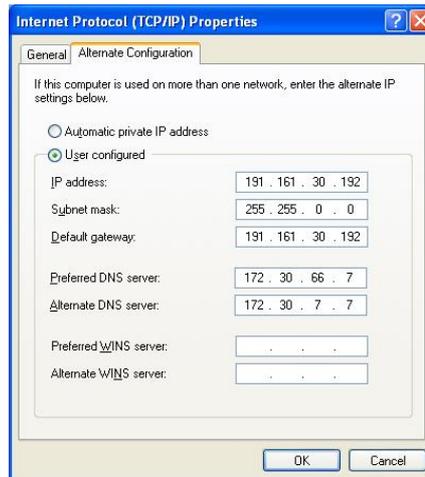
1. From the *Control Panel* open *Network Connections*
2. Select the Network Interface connected to the EXPLORER 110, right click on this and select properties.



3. Select the *Alternate Configuration* tab.
If this tab is not available, select *General* instead. Then enter the static IP address, and DNS servers given with your subscription information.

The *Default gateway* has to be set to a value **equal** to the *IP address*.

If the *Alternate Configuration* tab is used, The PC can be reconnected to a Local Area Network with automatic address assignment, without any need for reconfiguration.



4. Attach the EXPLORER 110 to your PC using the Ethernet cable.

4.2 Setting up EXPLORER 110

A Web browser interface is supported on the EXPLORER 110 and this can be used to configure the data service that is to be used over the satellite.

1. Enter the EXPLORER 110's default IP address 192.168.0.1 into your Web browsers address line and the *Status Summary* page will be shown.
3. Select the *Data Connections* menu item on the Web page. The following page will be shown:

| | | |
|--------------------------|--|---|
| STATUS | Connection Type | standard background |
| TRAFFIC LOGS | SIM Access Provider Name (APN) | BGAN.INMARSAT.COM |
| CONTACTS | User-defined APN | BGAN.INMARSAT.COM |
| TEXT MESSAGES | Apply user-defined APN | <input type="checkbox"/> |
| DATA CONNECTIONS | User Name | <input type="text"/> |
| Normal | Password | <input type="text"/> |
| Alternative 1 | Send static IP address to network | <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> |
| Alternative 2 | Data connection activation: | <input type="radio"/> Manual <input checked="" type="radio"/> Automatic when any PC is connected to unit <input type="radio"/> Automatic when a specific PC is connected <input type="text"/> <input type="radio"/> Automatic when a static IP address PC is connected to unit |
| BLUETOOTH | Status Information | <input type="button" value="Refresh status"/> |
| SETTINGS | Connection Status | Not Connected |
| DIAGNOSTIC REPORT | IP address for connected PC | 192.168.0.100 |
| HELP | Network assigned IP address | |
| TEST MMI | Changes only take effect from the next data connection | |
| | | <input type="button" value="Store settings"/> <input type="button" value="Connect"/> |

(This figure may differ slightly from the view in your web browser)

3. You now have to adjust the settings and options to fit your subscription. You may store three different data connection configurations: *Normal*, *Alternative1* and *Alternative2*. For most cases only one configuration (*Normal*) should be sufficient.

The different data connection settings are explained below.

Connection type:

Options are

| | |
|----------------------------|---|
| <i>Standard background</i> | Varying bit rate dependent on available resources. Tariff based on data volume. |
| <i>Streaming 32kbps</i> | Guaranteed bit rate. Time based tariff. |
| <i>Streaming 64kbps</i> | Guaranteed bit rate. Time based tariff. |

SIM Access Provider Name (APN)

The Access Point Name shown is that which has been read from your SIM card.

User defined APN

If your subscription details show a different APN from the SIM APM then this should be entered in this field, and the *Apply User defined APN* tickbox should be checked.

Username

If needed, the value is found in the subscription information.

Password:

If needed, the value is found in the subscription information.

Send static IP address to network

Some network providers require the subscriber static IP address to be sent to the network when connecting. If your subscription information states this is required that the IP is entered into this field.

If not required this field shall be set to 0 0 0 0.

Data connection activation

There are four different options on how EXPLORER 110 shall establish and exit a data connection against the satellite. Any configuration changes must be stored and require power down/up to become valid:

Manual:

The data connection is controlled manually by the *Connect / Disconnect* button on the bottom of the window.

Automatic when any PC is connected to EXPLORER 110 (default option)

This option is not applicable for static IP subscriptions.

Automatic when a specific PC is connected

This option is not applicable for static IP subscriptions.

Automatic when a static IP address PC is connected to EXPLORER 110

The data connection will be established automatically when a PC with a static IP address according to the subscription is connected to EXPLORER 110 via the Ethernet interface and satellite terminal is registered to the satellite network, e.g. by connecting using the EXPLORER ISDN HANDSET or pressing the *Activate* button on the terminal.

If the PC is disconnected, enters power save mode or turned off or if EXPLORER 110 loses connection with the satellite, the data connection will be automatically taken down.

Connection status

Current status of the connection against the satellite network.

The states are *Not connected*, *connecting* and *connected*.

IP Address for connected PC

Displays the IP address of the connected PC.

Network assigned IP address

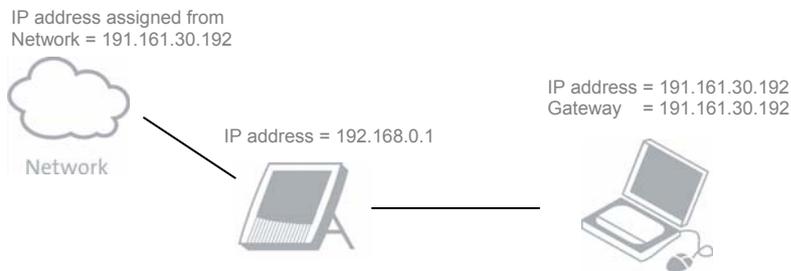
The IP address assigned from the satellite network. When EXPLORER 110 is not connected, this field will be blank.

Ensure that the IP address for connected PC is equal to the Network assigned IP address and the static IP address given with your subscription information. If there is a mismatch here the PC will not be able to reach the internet via the satellite, even when the connection status shows *Connected*.

Connect (button) / Disconnect (button)

Only applicable when the data connection activation is set to *Manual*. The button is used for controlling the data connection against the satellite network.

The figure below shows the resulting network topology for the single PC example.



5. MULTIPLE USERS

Multiple PCs or other types of Network equipment can be simultaneously served by the EXPLORER 110 by using a router, switch or hub.

5.1 Using a router

The router could either be set up as a DHCP client, retrieving a dynamic IP address from EXPLORER 110 or for static IP address subscriptions it could be set up with the belonging static IP address.

5.1.1 Dynamic IP address

Connect the PCs to EXPLORER 110 via the router. EXPLORER 110 shall be connected to WAN port while the PCs shall be connected to the LAN ports on the router.

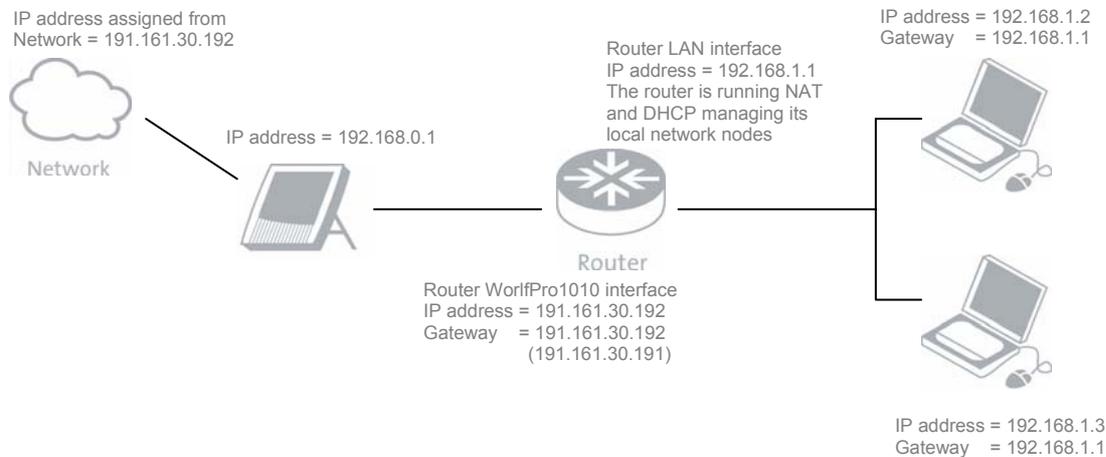
Ensure that the routers IP address and subnet on the LAN side does not overlap with the IP address and subnet of the EXPLORER 110. The default settings of the EXPLORER 110 are:

- IP address: 192.168.0.1
- Subnet mask: 255.255.255.0

In case the default IP address of the router is 192.168.0.xxx with subnet mask 255.255.255.0, the IP address could be changed to 192.169.1.xxx.

Also ensure that the PCs are set up to obtain IP addresses as described in section 16 *TROUBLESHOOTING*.

5.1.2 Static IP address



In the example above two network users are attached to the EXPLORER 110 via a Router. The router assigns IP addresses to the users, in the range from 192.168.1.2

The router runs a Network Address Translation service (NAT) so that while each local network user has a unique address, they also share the single connection to the BGAN network which in this example has the address 191.161.30.192

The Default gateway of the router has to be set **equal** to the IP address.

Please note !

Some routers do not handle that the gateway is set equal to the IP address. In that case the Default gateway of the router has to be set to a value **different** from the IP address. You can pick any address as long as it is inside the subnet mask, e.g. the address next to the IP address as seen in the example.

In this example the end users do not need to be configured with the static IP address. That configuration is instead applied to the router itself on its interface towards the EXPLORER 110.

Define the data connection for the router against the EXPLORER 110 as described in section 4.2.

5.2 Using an Ethernet switch

When using an Ethernet Switch the PCs could either be set up as DHCP clients, retrieving dynamic IP addresses from the satellite network via EXPLORER 110 or use static IP address belonging to the subscription.

5.2.1 Dynamic IP address

Connect the PCs to EXPLORER 110 via the Ethernet switch.

Assure that the PCs are set up to obtain IP addresses as described in section 16 *TROUBLESHOOTING* .

Data connection activation mechanism can be changed as described in section 3.2. Observe that the setting is valid for all PCs connected via the Ethernet switch. If *Data Connection 1* is set to manual then all PCs can set up a data connection individually by pressing *Connect* or *Disconnect*. If *Data Connection 1* is set to automatic then any PCs will set up a data connection when it is connected to EXPLORER 110.

Up to 11 PCs may be connected to the satellite network in parallel.

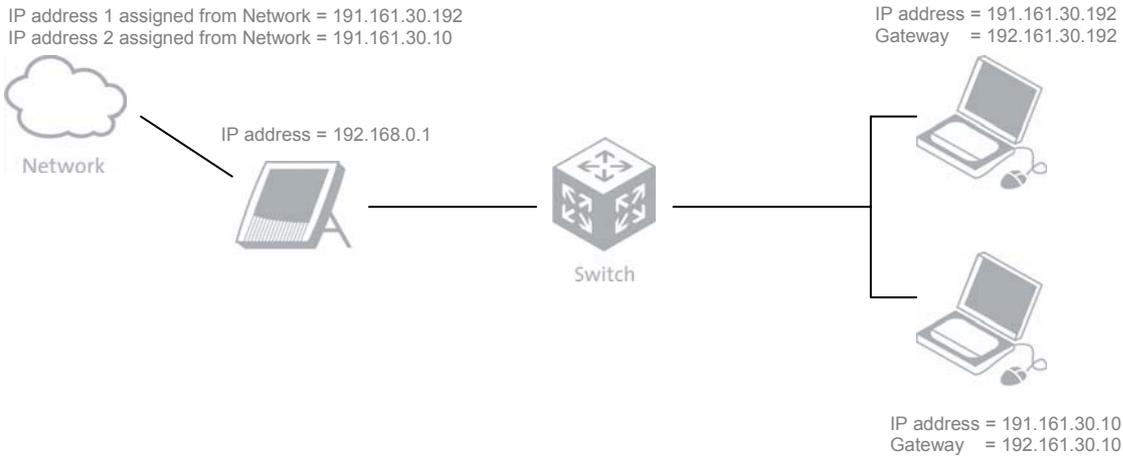
5.2.2 Static IP address

When an Ethernet Switch or Hub is used to attach multiple local users to the EXPLORER 110, each of these will use separate IP connections towards the BGAN network, and in consequence each has to be configured with static IP addresses as described in section 4.1.

Maximum three PCs may be connected to the satellite network in parallel, one per configured data connection.

Activate the data connection as described in section 4.2.

This setup requires that you have a **SIM card subscription with several IP addresses** assigned to it, one per attached PC.



6. CONTACT LIST

Contacts can be stored internally in the EXPLORER 110 or on the SIM card. This is handled under the *Contacts* menu item. You can add new contacts by pressing the *Add new* button. When clicking a contact name a menu will pop up and you can Dial, Edit or Delete the contact as shown in the figure below. When choosing the dial option the selected contact/number will be transferred to the Bluetooth dialling page. It is also possible to delete all internally stored or all SIM contacts in one operation.



7. TEXT MESSAGES (SMS)

Handling of text messages (SMS) is found under the *Text Messages* menu item. Here you are able to send, receive, store and delete messages. The contact list can be used for addressing or a phone number can be used directly. Messages can be stored on internally or on the SIM card.

| Type | To/From | Time | Location | Text |
|-------|----------|---------------------|----------|------------------------------|
| Draft | Tester 1 | 2007.04.26 08:58:55 | Internal | Hi George, everything is OK! |

8. BLUETOOTH

The BlueTooth interface can be used both for data traffic, dialling from/to a BlueTooth handset and dialling from/to a BlueTooth headset.

8.1 Data traffic from a PC and dialling from a BlueTooth handset (Tenovis)

Before sending data traffic from a PC with a BlueTooth interface or dial from a BlueTooth handset you have to prepare the BlueTooth interface on the terminal:

1. Enter the *BlueTooth – Configuration* menu.
2. If the *Status* field shows *Bluetooth disabled* you need to press the *Enable Bluetooth* button.
3. Make sure that the *Discoverable* check box is ticked.
4. It is recommended that you change the 4 digit *Access code*.
5. Press the *Save changes* button.
6. Search for BlueTooth devices from your PC or handset (***the BlueTooth search shall not be initiated from the satellite terminal !***). The satellite terminal will appear in the search list on the PC/Handset with the same name as in the *Name* field set in the Bluetooth – configuration menu. Use the same access code as above when requested in the PC or handset.
7. When the BlueTooth pairing is completed it is recommended that you untick the *Discoverable* check box in order to protect you privacy and avoid misuse of the terminal. This will also reduce the power consumption.

| | | |
|-------------------------|--|--|
| STATUS | Status: Bluetooth enabled | <input type="button" value="Disable Bluetooth"/> |
| TRAFFIC LOGS | Name | <input type="text" value="E110-42543"/> |
| CONTACTS | Discoverable | <input checked="" type="checkbox"/> |
| TEXT MESSAGES | Access code | <input type="text" value="****"/> |
| DATA CONNECTIONS | <input type="button" value="Store settings"/> <input type="button" value="Reset to default settings"/> | |
| BLUETOOTH | | |
| Calls | | |
| Device management | | |
| Configuration | | |

8.2 Dialling from a BlueTooth headset

Setup

The first time you enter this page you will be guided through a few steps in order to prepare the satellite terminal for BlueTooth dialling.

Step 1: In the *Calls* menu, enable BlueTooth by pressing the *Enable Bluetooth* button.
(If BlueTooth is already enabled you will be guided directly to next step.)

| | |
|-------------------------|--|
| STATUS | <p>Bluetooth must be enabled and paired to a headset device before proceeding.</p> <input type="button" value="Enable Bluetooth"/> |
| TRAFFIC LOGS | |
| CONTACTS | |
| TEXT MESSAGES | |
| DATA CONNECTIONS | |
| BLUETOOTH | |
| Calls | |
| Device management | |
| Configuration | |

Step 2: Set the head set in pairing mode and press the *Configure pairing now* button.

In case any other BlueTooth devices are connected to the terminal, they will be displayed.
(Note: Please note that it is not possible to pair to a headset if a handset is already paired to the terminal. If you have a device called PIA in the list it has to be disconnected by pressing the *Disconnect* button.)

| | |
|---|--|
| NO DEVICES CURENTLY PAIRED AND CONNECTED | |
| <input type="button" value="Refresh list"/> | <input type="button" value="Run discovery"/> |

Then press the *Run discovery* button

Step 3: The terminal will search for the BlueTooth headset and after a while display it in the list. Enter the PIN code (default 0000) and press the *Connect* button.

| HEADSET DEVICES FOUND | | | |
|---|---------|--|--|
| MAC | Name | Paired | |
| 00:16:20:E7:C3:E1 | HBH-608 | No | PIN code <input type="text"/> <input type="button" value="Connect"/> |
| <input type="button" value="Refresh list"/> | | <input type="button" value="Run discovery"/> | |

The terminal will then show updated pairing status:

| DEVICES CURENTLY PAIRED AND CONNECTED | | | |
|--|---------|--------|---|
| MAC | Name | Paired | |
| 00:16:20:E7:C3:E1 | HBH-608 | Yes | <input type="button" value="Disconnect"/> |
| <input type="button" value="Refresh list"/> <input type="button" value="Run discovery"/> | | | |

Dialling

Enter the *BlueTooth – Dialling* menu. Enter the phone number and press the *Call* button. Finish the call by the *Hangup* button.

Dialling via BlueTooth may also be carried out from the *Contacts* menu by clicking a contact name and choosing the *Dial* option in the appearing pop up menu.

| | |
|-------------------------|---|
| STATUS | Phone number <input type="text"/> <input type="button" value="Call"/> <input type="button" value="Hangup"/> |
| TRAFFIC LOGS | |
| CONTACTS | Incoming call acceptance is required to be confirmed on the headset. The headset will indicate that confirmation is required by means of a tone. |
| TEXT MESSAGES | |
| DATA CONNECTIONS | |
| BLUETOOTH | |
| Calls | |
| Device management | |
| Configuration | |

9. SETTINGS - GENERAL

The *Settings-General* page in the web MMI lets you configure the following settings:

| | |
|---------------------------------|--|
| Automatically register. | Applicable for use with a fixed/semi fixed antenna installation and for SCADA applications. When this is set the EXPLORER 110 will register automatically when the satellite is line of sight and the satellite signal strength is sufficient. Then there is no need for pressing the <i>Activate</i> button on the EXPLORER 110. |
| IP header compression | Increase the bit rate by compression of IP packet headers. See RFC 2507 for details. Leave unchecked if in doubt. |
| Allow control by SMS | Allows remote activation of data connections via SMS received by the EXPLORER 110. See next page. |
| SMS password | User defined password for remote activation of data connections via SMS. |
| Buzzer volume | Controls the buzzer volume when searching for satellite. |
| Time zone. | Applicable for all time settings in the EXPLORER 110. |
| Interface unit light indicators | Turn on/off the light indicators on the interface unit. |
| Antenna unit light indicators | Turn on/off the light indicators on the antenna unit. |

Changes will be applied when clicking the *Store settings* button, except from *Automatically register* and *IP header compression* which requires a power cycle.

| | | |
|--------------------------------|--|--------------------------|
| | * Automatically register | <input type="checkbox"/> |
| STATUS | * IP header compression | <input type="checkbox"/> |
| TRAFFIC LOGS | Allow control by SMS | <input type="checkbox"/> |
| CONTACTS | SMS password | <input type="text"/> |
| TEXT MESSAGES | Buzzer Volume | high ▾ |
| DATA CONNECTIONS | Time zone | +00.00 ▾ |
| BLUETOOTH | Interface unit light indicators | on ▾ |
| SETTINGS | Antenna unit light indicators | on ▾ |
| General | <input type="button" value="Store settings"/> <input type="button" value="Restart Unit"/> <input type="button" value="Reset to Factory Settings"/> | |
| Locks | * These settings take effect from the next power-up | |
| Ethernet | Software Version: 02.09.04, built on 2007-03-29 at 14:09:52,31 | |
| Upgrade terminal software | | |
| Upgrade voice handset software | | |
| AT Commands | | |
| DIAGNOSTIC REPORT | | |
| HELP | | |

10. SETTINGS - ETHERNET

The *Settings-Ethernet* page in the Web MMI lets you change the settings of the Ethernet interface on the EXPLORER 110.

You may enable and disable the Ethernet interface, set IP address and subnet mask and configure the DHCP server.

In most cases it should not be necessary to change the Ethernet settings.

One example on need for change is to avoid IP address conflict between the EXPLORER 110 and a router. However, this may also be obtained by changing the router settings.

After editing the settings, click the *Store settings* button and **power cycle** the EXPLORER 110 to apply the new settings.

11. REMOTE CONTROL OF DATA CONNECTIONS BY SMS

Activation and deactivation of data connections may be carried out remotely by sending specific SMS messages to the EXPLORER 110. This is especially applicable for SCADA applications.

Setting up the EXPLORER 110

1. Enter the Settings menu item and set the *Automatically Register* tick box and *Allow control by SMS* tick box.
If wanted the SMS remote control may be password protected. Enter a password into the *SMS password* field. The password is case sensitive, may contain numbers and has a maximum length of 30.
Press *Store settings*.
2. Enter the *Data Connections* menu item and set the *Data connection activation* to *Manual*. Press the *Store settings* button. Make sure that also the *Alternative 1* and *Alternative 2* connections are set to *Manual*.
In case a PC with static address is going to be controlled, a data connection has to be configured for this PC as described in the *Static IP Address Subscription* section above.
Restart the EXPLORER 110.

Remote control by SMS

Data connections may be activated or deactivated by an incoming SMS formatted as follows:

```
ACTIVATE < cid > < DHCP | STATIC | NAME > <password>
DEACTIVATE < cid > < DHCP | STATIC | NAME > <password>
```

- cid** A numeric value identifying the data connection to be activated/deactivated. By default, three connection setups are defined:
- 1: Standard data service (same as Data Connections – Normal)
 - 2: 32kb/s streaming service (same as Data Connections – Alternative 1)
 - 3: 64 kb/s streaming service (same as Data Connections – Alternative 2)
- DHCP** The second parameter has to be set equal to `DHCP` when the actual data connection is configured for a PC with dynamic IP address. When two or more PCs are connected and set up as DHCP clients via a switch (dynamic IP address subscription), data connections will be activated or deactivated for all these PCs.
- STATIC** The second parameter has to be set equal to `STATIC` when the actual data connection is set up for a PC with static IP address. Make sure that the Data Connection related to the actual `cid` is configured with the correct IP address, User Name and/or Password as described in the Static IP Address Subscription section above.
- NAME** The second parameter has to be set equal to the PC name when the actual data connection is configured for specific PC with the same name. This is applicable for dynamic IP addresses only. Note that the name cannot contain any spaces. The name definition differs somewhat between the most common operating systems:
- Windows: The computer name (My Computer property), excluding the domain part
 - MacOsX: The DHCP client ID as defined in the System Preferences pane
 - Linux: The host name
- password** Optional password used for protection of remote control. Identical to the password entered in the setting menu. If omitted in the settings menu then no password is required. 'ni8W3er' is used as password in the example below.

Examples

The following examples show the contents of SMS sent to the EXPLORER 110 for activation of data connections:

Activate data connection *Normal* for all connected PCs with dynamic IP address using password:

```
ACTIVATE 1 DHCP ni8W3er
```

Activate data connection *Alternative 1* for a PCs with static IP address:

```
ACTIVATE 2 STATIC ni8W3er
```

(This requires that *Data Connections – Alternative 1* has to be set up for a static IP address.)

Activate data connection *Alternative 2* for a PC with dynamic IP address named "MYPC":

```
ACTIVATE 3 MYPC ni8W3er
```

(This requires that *Data Connections – Alternative 2* has to be set up for a specific PC name.)

For deactivation the corresponding messages are:

```
DEACTIVATE 1 DHCP ni8W3er
```

```
DEACTIVATE 2 STATIC ni8W3er
```

```
DEACTIVATE 3 MYPC ni8W3er
```

Please note that when DHCP is specified, all PCs with dynamic IP address are affected (named or unnamed). If named PCs shall be addressed, the NAME-form must be used for all activation and deactivation operations.

12. SOFTWARE UPGRADE FOR EXPLORER 110 VIA ETHERNET

The satellite terminal software may be updated under the *Settings – Upgrade Terminal Software* menu. It is recommended that the satellite terminal is powered both by battery and DC power when upgrading SW. The EXPLORER 110 must not be disconnected from power during the upgrade. If power is lost while the EXPLORER 110 memory is being re-written then a software download via a USB connection would be required to restore normal functionality.

13. SOFTWARE UPGRADE FOR EXPLORER ISDN HANDSET

If you have an ISDN handset, this may be updated under the *Settings – Upgrade Voice Handset Software* menu.

In case you are upgrading from handset software rev. 1.5.9 or older, it is recommended to use the USB interface and the ISDN splitter instead of the Ethernet interface for handset software upgrade.

When using the Ethernet interface the upgrade procedure might fail in some rare cases and then your device must be returned to a service center for repair. Do not attempt this upgrade procedure via Ethernet unless you have the possibility to return the EXPLORER ISDN HANDSET or have a replacement available.

14. LAUNCHPAD

You may also set up and activate data connections by use of the LaunchPad PC application, revision 3.1 or later. LaunchPad does however not support auto activated data connections when LaunchPad is active.

Dynamic IP address:

1. Enter the EXPLORER 110 Web MMI and set all data connections (*Normal, Alternative 1, Alternative 2*) to manual activation (see section 3.2).
2. Start up the LaunchPad PC application.
You are now ready to register with the network and activate the connection by use of the icons in the *Data* section of LaunchPad.

Static IP address:

1. Set up the PC as described in section 4.1
2. Enter the EXPLORER 110 Web MMI and set all data connections (*Data Connection 1-3*) to manual activation (see section 3.2).
3. Start up the LaunchPad PC application.

If your subscription requires a user name and password this has to be set up in LaunchPad as described in step 4 and 5.

4. Under the LaunchPad menu *BGAN Services*, select *LaunchPad APN Options*.
5. Press the *Edit* button and enter the user name and password in the *APN Configuration* box and press *OK*.

For some subscriptions, the pre defined static IP address has to be sent via the satellite when activating a data connection. The need for this should be given along with your subscription details and SIM card. If you are not sure whether this is applicable to your subscription or not, try first **without** carrying out the following steps (6-8). Otherwise, the IP address has to be stored as a part of the data connection icon. This is done in the following way:

6. Under the LaunchPad menu *BGAN Services*, select *LaunchPad Data Tab Options*.
7. Select the desired connection icon (in most cases *Standard*) and press the *Edit* button.
8. In the *IP Connection* section, select the *Use Static IP Address* option and enter the IP address following your subscription. Press the *OK* button to return to the LaunchPad main window.

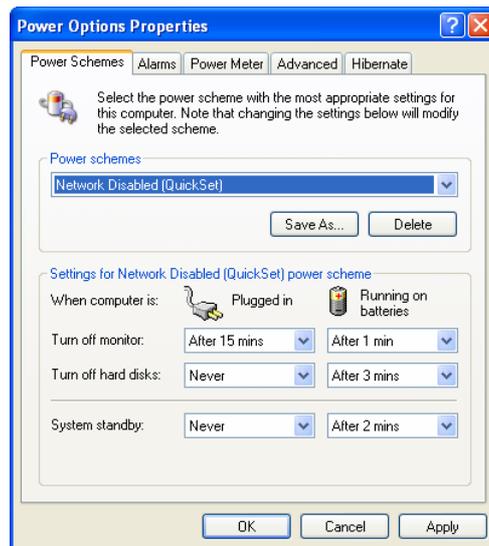
You are now ready to register with the network and activate the connection by use of the icons in the *Data* section of LaunchPad.

15. POWER SAVE

Power saves by automatic disabling of Ethernet port when in standby Mode.

The Ethernet controller in the UT will automatically be turned off when the Ethernet cable is removed or when the Ethernet controller on the TE is turned off. This is also applicable when a connected Laptop (PC and Mac) enters standby mode (PC) or sleep mode (Mac).

For PCs the standby mode setting is found under *Control Panel | Power options*, while for Mac the sleep setting is found under *System Preferences | Energy Saver | Sleep*.



It is recommended to configure your PC/Mac for power-save when in battery mode, as it will significantly improve the stand-by length before the batteries (PC/EXPLORER 110) needs to be re-charged.

16. TROUBLESHOOTING

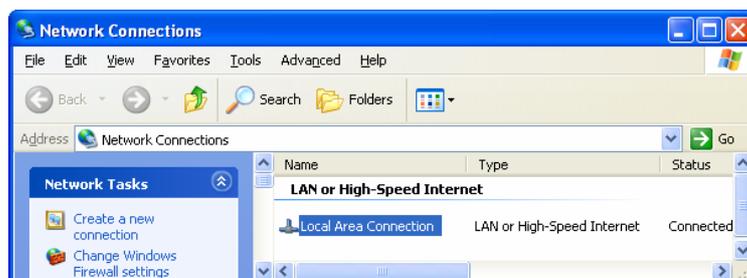
16.1 Local connectivity

If problems are experienced accessing the EXPLORER 110 by the Ethernet interface then the following should be checked.

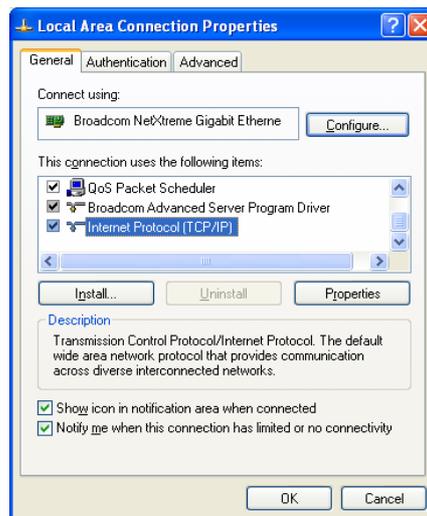
a) For dynamic IP address subscriptions:

If the data connection is not automatically established, please ensure that the PC obtains the IP address automatically:

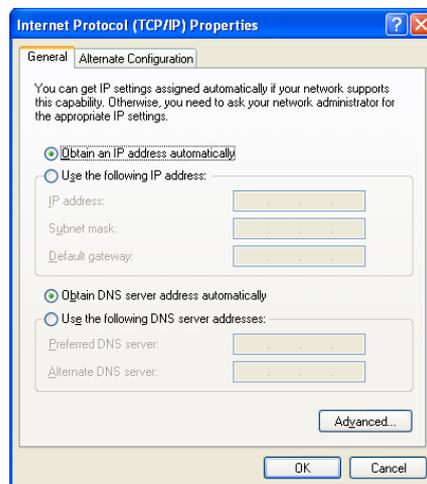
1. From the *Control Panel* open *Network Connections*



2. Select the Network Interface connected to the EXPLORER 110, right click on this and select properties.



3. Ensure that the *Obtain an IP address automatically* option is selected and close the window by pressing OK.



- b) For static IP address subscriptions:
 - Has the PCs local network interface been set so that its Gateway address is **equal** to its own IP address? **Please note when a router is connected to the EXPLORER 110!** Some routers do not handle that the gateway is set equal to the IP address. In that case the Default gateway of the router has to be set to a value different from the IP address. You can pick any address as long as it is inside the subnet mask, e.g. the address next to the IP address as seen in the example.
- c) Is the IP address of the EXPLORER 110 set correctly? The factory default settings can be restored from the EXPLORER ISDN HANDSET.
- d) Is the cable correctly attached and of the right type? A straight standard Ethernet cable is needed to attach directly to a PC. If a Router or Switch/Hub is used then a crossover cable will be needed if the device does not automatically correct for the sense of the connection used. Verify from your operating system if the network card attached to the EXPLORER 110 is correctly attached.
- e) Has the PC switched to the alternative IP configuration (WinXP)? Right click on the Network connection being used and select "Repair". This will cause the PC to switch to the alternative IP configuration if it is not automatically assigned an IP address.

- f) When using a Router and dynamic IP address subscription:
Ensure that the routers IP address and subnet on the LAN side does not overlap with the IP address and subnet of the EXPLORER 110. The default settings of the EXPLORER 110 are:
- IP address: 192.168.0.1
 - Subnet mask: 255.255.255.0
- In case the default IP address of the router is 192.168.0.xxx with subnet mask 255.255.255.0, the IP address could be changed to 192.169.1.xxx.

16.2 Internet access

Problems with access to the Internet may often be due to incorrect configuration of the data service.

- a) Check that the Data connections settings match the subscription information.

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