



Using Zistos PNSC over BGAN

Self powered Field
Surveillance and
Monitoring

Version 01

12th November 2009

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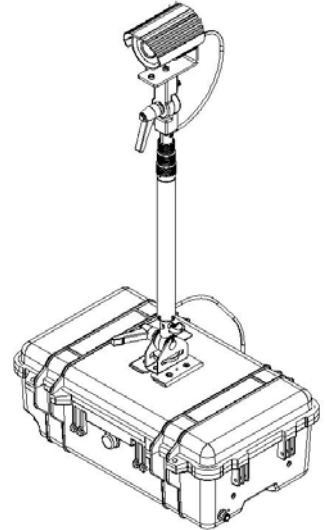
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1 Overview

The Zistos PNSC is designed to provide a turn-key solution for field surveillance and radiological monitoring applications, where no power or pre-existing networks are available. This self-contained, self-powered system allows for dynamic deployment of single or multiple video surveillance cameras in the field.

The Zistos PNSC is rugged and completely weatherproof when the cover is closed and the system is properly assembled. It consists of a pole-mounted camera mounted to the carrying case. Two choices of camera are available – a Day/Night camera with Vari-focal lens, and a Day/Night PTZ type camera. The Day / Night camera is available with optional white light illumination.

When the PNSC is used with the BGAN satellite connection, Surveillance and sensor data is broadcast over the internet. The PNSC can be controlled and monitored by the control computer connected to the internet anywhere in the world.



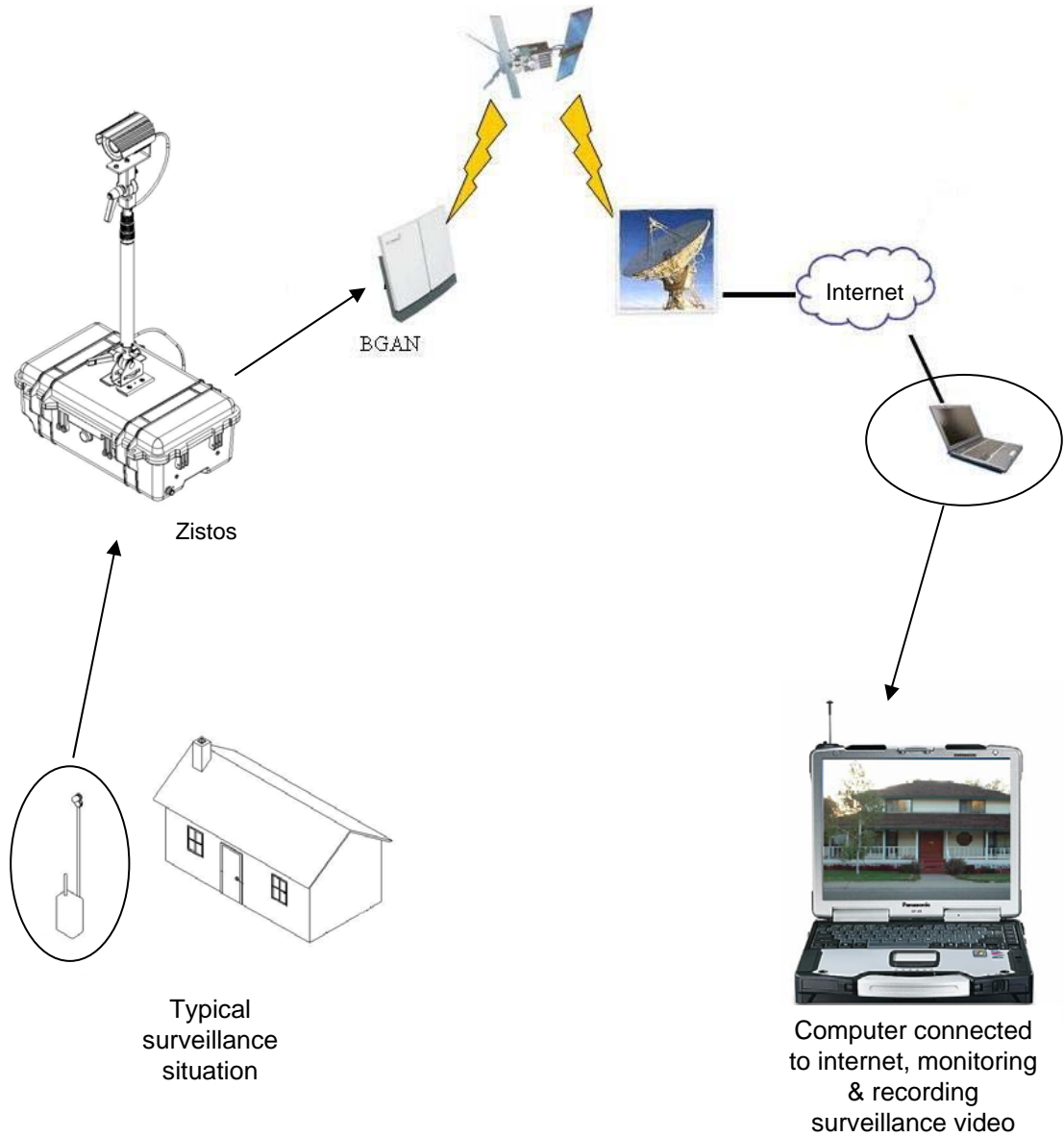
2 Applications

- Perimeter surveillance around a mobile asset/terrorist target
- Video and Lighting support for disaster management scenarios
- Event security for large and small venues
- Tactile covert surveillance for hostage barricades
- Surveillance for sting operations: warehouse, loading docks, depots
- Border security / VIP security
- Construction site safety and security
- Optional Gamma radiation sensor available

3 Features & Benefits

- Cost-effective solution
- Easy to transport and deploy – sets up in 5 minutes!
- Rugged Weatherproof design
- Battery powered Camera can run up to 30 hours between charges
- Motion alarm capable
- Records video on PC
- Optional Gamma Radiation Sensor available

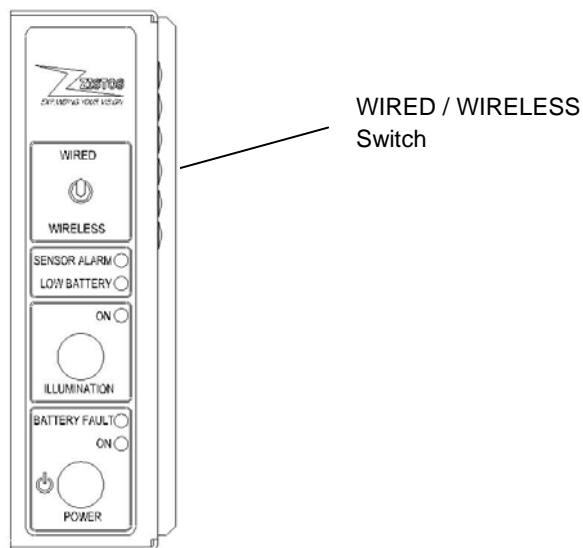
4 Network Diagram



This instruction sheet includes additional instructions for setting up PNSC to interface with BGAN satellite communication. Physical setup of the PNSC and software loading instructions are included in the standard PNSC manual supplied.

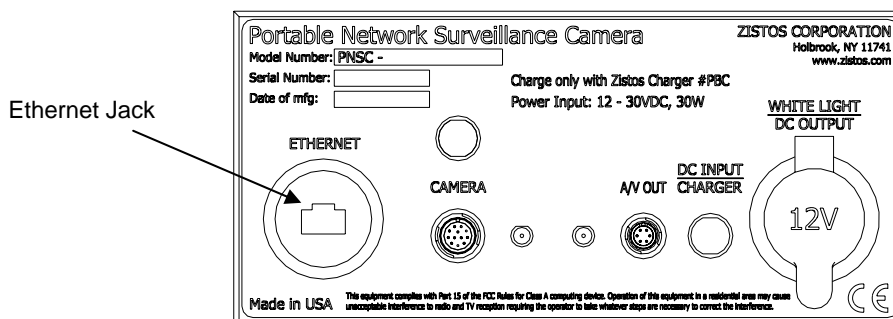
5 Connecting PNSC to BGAN

When operating the PNSC with the BGAN terminal, the PNSC must be set to 'Wired' mode.



PNSC Control Panel

Plug a standard CAT5 Ethernet cable into the jack labeled Ethernet on the rear panel of the PNSC.



PNSC Rear Panel

6 Configuring the PNSC Video Server Console

Using the PNSC with BGAN satellite connectivity requires modification of the PNSCs default settings. This can be accomplished using any standard PC with a standard wired Ethernet connection.

Connect the computer to the PNSC Ethernet with a suitable length of CAT5 Ethernet cable.

To log onto the PNSC video server and make configuration changes, the PC TCP/IP settings will need to be temporarily changed.

1. Turn the PC on.
2. Go to Start > Control panel

3. Double-click the Network and internet Connections icon
4. Double-click the Network Connections Icon
5. Highlight the Icon labelled Local Area connection and click on "Change settings of the connection in the Network tasks Column.
6. Select internet protocol (TCP/IP) from the list and click on Properties
7. Click the Use the following IP address radio button and enter the IP address and subnet mask as shown. Click OK when finished

IP Address: 192.168.0. x

Subnet Mark : 255.255.255.0

Where x can be any number from 2 – 254 except 100

8. Using a web browser, enter address http://192.168.0.1
9. When you reach the Video Server Console sign-in screen, for **user name**, enter: **admin**. For the **password**, enter: **123456**
10. Once the video monitor window has opened, click on **Quit** near the upper left hand corner of the display. The following screen is displayed.

6.1 WAN Settings

The next thing that needs to be configured is the WAN settings. On the web interface

1. Click on: >> Wan Setting
2. Change the IP address of the video server to:

Hughes HNS 9201 uses 192.168.128.X

X = From 200 to 209 for a Background Connection using the **ACA settings for TEs with Static IP address**

All Thrane & Thrane terminals 192.168.0.X

X = From 2 to 254

AddValue terminals 192.168.1.X

X = From 1 to 254 except 35

Subnet mask: 255.255.255.0 for all is

USP Gateway: The IP address of the terminal.

Hughes HNS 9201 uses 192.168.128.100

All Thrane & Thrane terminals 192.168.0.1

AddValue terminals 192.168.1.35

Click on: **Apply**. Make sure you click the Apply box in the section labelled WAN setting

Click on: >> **Save Reboot**

6.2 Video settings

1. Click on: **>> Video Settings**
2. Verify **Encoder Type** is set to: **MPEG4**
3. Set **Frame Rate** to: **(1 to**
4. Set **Video Maximum Bitrate** to: **(56k to a maximum of 384K)**

Or

- Set **Encoder Type** to: **MJPEG**
- Set **Quality** to: **(10 to 100)**
5. Click on: **Apply**
6. Click on: **>> Save Reboot**

7 Configuring the BGAN terminal

7.1 Thrane & Thrane EXPLORER™ 300/500/700 and 527

Background IP service should be initiated from the BGAN terminal and can be configured from either the EXPLORER™'s built-in web server (via a laptop's web browser) or using the LCD MMI.

1. Open your internet web browser and type the following IP address in the address bar: 192.168.0.1



2. Click on Settings and then LAN
3. Now you should see the web server interface. The screenshot below shows the settings required as configured via the EXPLORER™'s web server interface, ensure you click apply before leave the web page. Please consult your EXPLORER™ manual for more detailed information.
4. NAT Mode Select **Router**
5. APN Select **User Defined**, enter the APN, user name and password provided by your SP in order to get a Static IP address. NOTE: If no static IP address is used your IP address will change every time you connect to the BGAN network. On the dashboard screen you can see the IP address of you connection.
6. Automatic Activation select **Enable**.
7. Click **Apply**
8. Now your terminal is configured to start a Standard connection after you register on the network.
9. Click on **Port Forwarding** on the left Menu.
10. On **Port Forwarding** select **ENABLE**.

11. Check the Active box and enter **80** for the Incoming port Range and the IP address you configured in the PNSC ex. 192.168.0.X then for the destination port **80**
12. Check the Active box and enter **6005 to 6006** for the Incoming port Range and the IP address you configured in the PNSC ex. 192.168.0.X then for the destination port **6005**
13. Click **APPLY before leaving the page.**
14. Restart your terminal and click OK after properly pointing the terminal. Once the Explorer is register on the BGAN network you will be connected automatically with a Standard connection.

Connecting to BGAN via LCD MMI

The screenshot below shows the settings required as configured via the EXPLORER™ LCD MMI.

To initiate a connection from the LCD MMI, go to the main view of the LCD.



Press Arrow Down button until CONNECT menu is selected

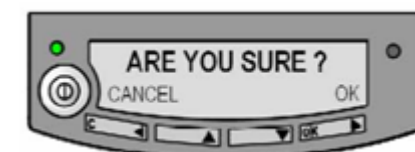


Press OK

Select Standard and press OK button



Select START and press OK button



Press OK button to confirm Standard connection and wait a minute or two to allow the EXPLORER™ to register the Packet Switched connection with the BGAN system. After

registration the LCD main screen will show DATA ACTIVE.

7.2 Thrane & Thrane EXPLORER™ 110

Background service should be initiated from the BGAN terminal using the EXPLORER™110's built-in web server (via a PC's web browser).

1. Open your internet web browser and type the following IP address in the address bar:
192.168.0.1



2. Now you should see the web server interface
3. Next, click on Data connections on the left hand side menu.
4. Change the connection type by clicking the dropdown box and select '**Standard Background**'.
5. Make sure your Data Connection Activation is set to '**Automatic when any PC is connected to the Unit**'
6. APN Select **User Defined APN**, enter the APN, check **Apply user defined APN**, enter the user name and password provided by your SP in order to get a Static IP address. NOTE: If no static IP address is used your IP address will change every time you connect to the BGAN network. On the Status screen you can see the IP address of you connection.
7. Before you exit the web interface make sure you click '**Store Settings**'.

You can connect to BGAN in two different ways, from the web server interface or by using the front panel.

Using the front panel

1. Power on the terminal by pressing and holding the ACTIVATE for 1.5 seconds.
2. Obtain a GPS fix.
3. Find the best signal.
4. Press the Activate on the front panel of the terminal and you will automatically register to the network. Wait approx. 30 seconds and you will be on the internet. If you have a World Set you will see displayed 'Connected'.

Using the Web Interface (if you set up 'Data connection Activation' to 'Manual')

5. Open your internet web browser and type the following IP address in the address bar:
192.168.0.1



6. Next, click on Data connections on the left hand side menu.
7. Make sure the 'Manual' radio button is selected under connections
8. Finally, scroll down and click 'Connect' at the bottom of the page.

7.3 Sabre 1 Wideye

Background Standard service should be initiated from the BGAN terminal and needs to be configured from the Wideye™ Sabre 1's built-in web server (via a PC's web browser).

1. Open your internet web browser and type the following IP address in the address bar: 192.168.1.35
2. Then you will prompt for the User Name: sabre1 Password: wideye.
3. On the web interface, Click on the Data Icon
4. Click on Primary Profiles
5. Select the connection Type as Standard
6. Check mark 'Set as default'
7. Click 'Update Settings'

Your configuration should look like this

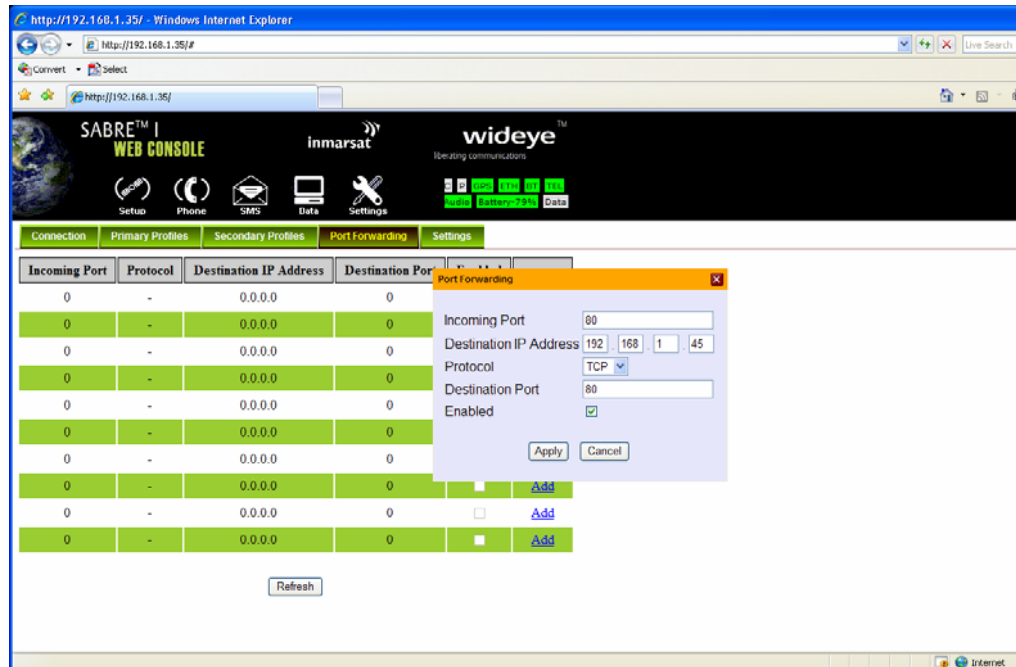
The screenshot shows the SABRE 1 WEB CONSOLE interface. The top navigation bar includes 'Setup', 'Phone', 'SMS', 'Data', and 'Settings'. The 'Data' icon is highlighted. Below the navigation bar, there are tabs for 'Connection', 'Primary Profiles', 'Secondary Profiles', 'Port Forwarding', and 'Settings'. The 'Primary Profiles' tab is active, showing a list of profiles on the left: 'Standard', 'Streaming32', 'Streaming64', 'Profile 4', 'Profile 5', 'Profile 6', 'Profile 7', 'Profile 8', 'Profile 9', and 'Profile 10'. The 'Standard' profile is selected. The configuration form for the 'Standard' profile is displayed, including the following fields and options:

- Set as default
- Profile Name: Standard
- Connection Type:
 - Standard
 - Streaming
- Access Point Name (APN):
 - SIM: bgan.inmarsat.com
 - User Defined: []
- Username: []
- Password: []
- IP Configuration:
 - Dynamic IP Address
 - Static IP Address: [] [] [] []
 - Use Header Compression

Buttons at the bottom include 'Update Settings', 'Cancel', and 'Activate Profile'.

8. Click on the Settings Tab
9. Select 'Router Mode (Multi User)'
10. Check the box for 'Auto PDP context Activation'. This will make the terminal start the Standard connection automatically after you register on the network.
11. Save settings
12. Click on **Port Forwarding**

13. Click **Add**, Enter the Incoming port 80 destination address the IP you assigned to the PNSC 192.168.1.X, Protocol TCP and the destination port 80. Check **Enable** and click **Apply**.



14. Click **Add**, Enter the Incoming port 6005 destination address the IP you assigned to the PNSC 192.168.1.X, Protocol UDP and the destination port 6005. Check **Enable** and click **Apply**.
15. Click **Add**, Enter the Incoming port 6006 destination address the IP you assigned to the PNSC 192.168.1.X, Protocol UDP and the destination port 6006. Check **Enable** and click **Apply**.
16. Save Settings
17. Reboot the terminal
18. Accept the signal strength by pressing Enter on the LCD screen. Now your Standard connection should start in a minute or so.

7.4 HNS 9201, 9250 and 9350

Standard service should be initiated from the BGAN terminal and needs to be configured from the Hughes™ HNS9201's built-in web server (via a PC's web browser).

1. Open your internet web browser and type the following IP address in the address bar: 192.168.128.100
2. Click on ACA on the menu on the left.
3. Select ACA settings for TEs with Static IP address 'ON' for the range of 200 – 209. QoS select Background. Enter the APN, user name and password provided by your SP in order to get a Static IP address. NOTE: If no static IP address is used your IP address will change every time you connect to the BGAN network. On the PDP Contexts screen you can see the IP address of you connection.

4. Click **Apply**
5. Then Click Restart Terminal
6. Now register the terminal by pressing the Audio button until the signal strength lights go off or by clicking the Register with the Network button on the Properties page of the web interface.
 7. The terminal will automatically recognize the IP address assigned to the PNSC and start the Background connection automatically.

8 Zitos Setup

8.1 Camera setup and Monitoring

Adding PNSC stations to the system

1. Click on the ActiveSetup shortcut
2. Log into **Active Setup**



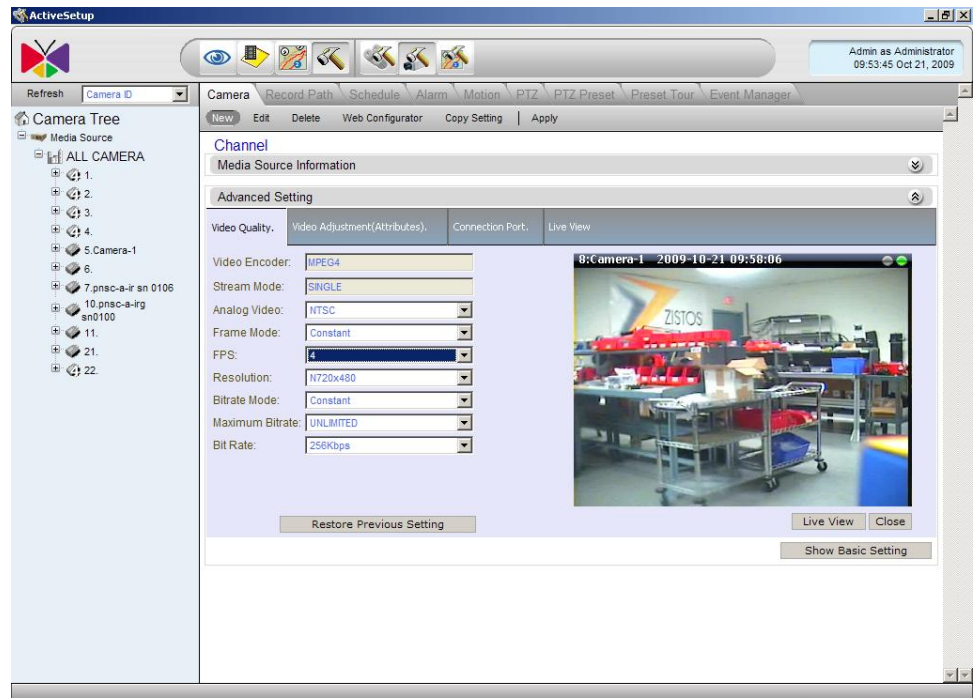
User account: **Admin**
 Password: **123456**
 Server IP address: **Local host**
 Language: **English**
Auto log in with this account: (check this box if auto login is desired)

3. Click on the Setup Camera icon (the hammer with the camera)



Active setup icons

4. Click on the **Manual** radio button
5. In the Camera IP box, enter the WAN IP address of the BGAN terminal.
6. Click on the **Get Device setting** tab
7. The following screen should appear. Click **Apply**



8.2 Control and Monitoring

All standard control and monitoring functions of the PNSC and monitoring software NVR are specified in the PNSC user manual. Consult the manual for all camera control and monitoring functions.

9 Bandwidth Usage

Here are some examples of the bandwidth and data rates for the various settings-

For MPEG 4

Frame rate	Bit Rate	Bandwidth kbps
4	256K	332
4	128K	166
4	56K	78

For MJPEG

Quality	Bandwidth kbps
100	130
70	91
30	39

10 Zistos Contact Information

Inmarsat Contact

Customer_Care@inmarsat.com

Zistos Contact

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