

# Using a Barix Instreamer to Remotely Connect a Direction Finder via a Network Connection

*A Technical Application Note from Doppler Systems*

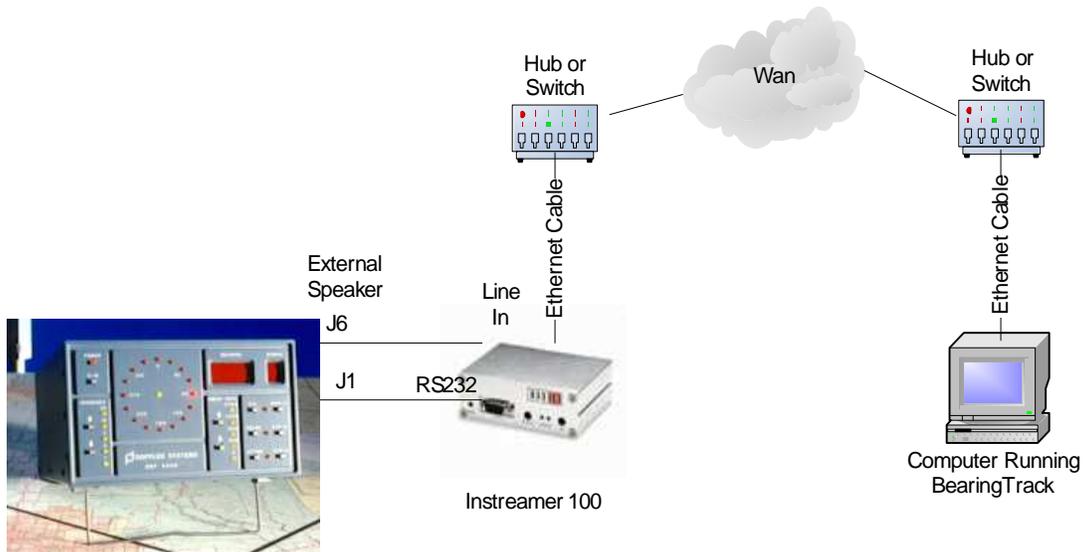
January 18, 2008

## 1.0 Introduction

Many customers would like to monitor audio from their remote direction finders. This application note describes how a Barix Instreamer 100 can be used to remotely connect a Doppler DDF6001 direction finder via a standard TCP/IP Ethernet connection.

## 2.0 Hardware Connections

Connect the Barix Instreamer RS232 connector to the direction finder using a standard serial cable. Connect the External Speaker (J6) on the direction finder to either one of the Line In connections on the Instreamer. Connect the Ethernet cable to a Ethernet hub or switch. Connect the power adapter to the Instreamer.



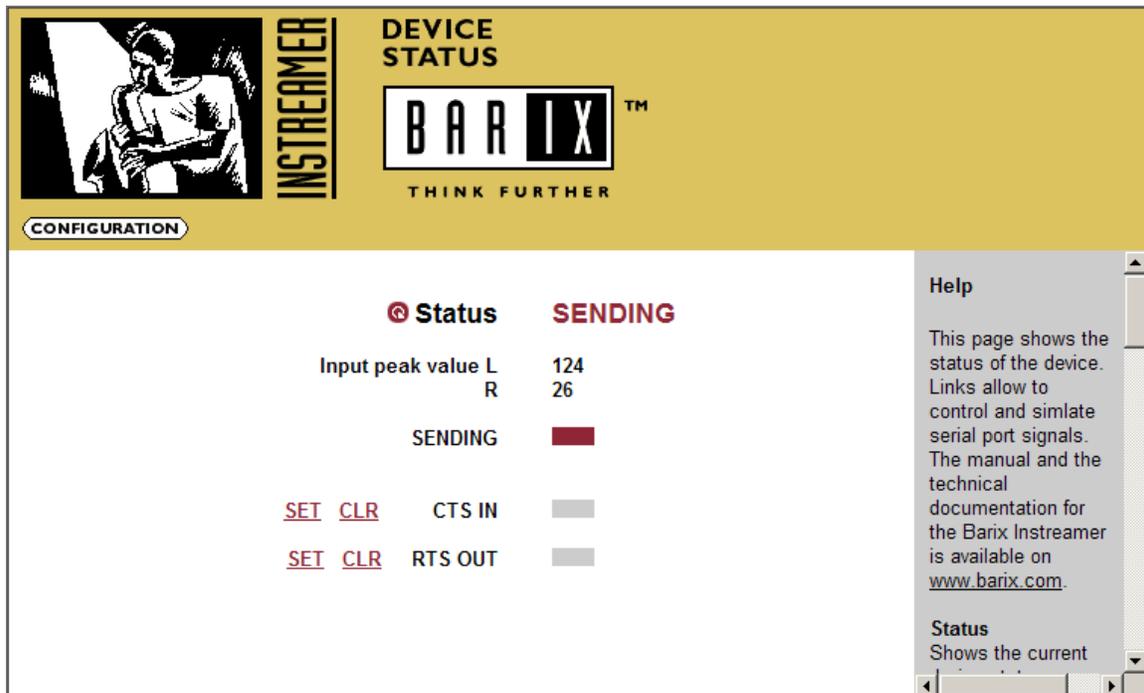
## 3.0 Software Setup

### 3.1 Obtaining the IP Address

Prior to powering the Instreamer connect the network cable to a hub or switch. Plug headphones or an earphone into the headphone jack of the Instreamer. Get a pencil and paper and then power up the Instreamer. If you are on a network that has DHCP support, shortly after powering the device it will announce the IP address of the device. If there is no DHCP server the Instreamer will search the network for a free address. This could take as much as 5 minutes. If it finds an available address it will announce over the headphones. Write down the IP address. If it does not find an available address press the reset button for 5 seconds to reset the device and assign the default IP address.

### 3.2 Configuring the Instreamer

Connect a computer to the network. Launch your internet browser and type in the IP address obtained above (e.g. 192.168.0.12). The webpage shown below should be displayed.



The screenshot displays the Barix Instreamer web interface. At the top, there is a header with the Barix logo and the slogan "THINK FURTHER". Below the header, a "CONFIGURATION" button is visible. The main content area shows the device status as "SENDING". The status is accompanied by a red progress bar. Below the status, there are two rows of controls: "CTS IN" and "RTS OUT", each with "SET" and "CLR" links and a corresponding progress bar. A "Help" sidebar on the right provides information about the page and links to the manual and technical documentation.

Status	
Input peak value L	124
R	26
SENDING	<div style="width: 100%; height: 10px; background-color: red;"></div>
<a href="#">SET</a> <a href="#">CLR</a> CTS IN	<div style="width: 0%; height: 10px; background-color: gray;"></div>
<a href="#">SET</a> <a href="#">CLR</a> RTS OUT	<div style="width: 0%; height: 10px; background-color: gray;"></div>

Press the Configuration Button to display the following page

The screenshot displays the Barix Device Configuration web interface. At the top, there is a header with the Barix logo and the slogan "THINK FURTHER". To the right of the logo, system information is listed: MAC (0008E1007777), Firmware (V02.06 (07/31/2006)), Web application (V01.14), Bootloader (V99.10), Setup (V01.05), Song (V03.03), and XT (V00.03). Below the header is a navigation bar with buttons for SETTINGS, DEFAULTS, REBOOT, UPDATE, and HOME. The main content area is titled "SETTINGS" and has a sub-menu with tabs for NETWORK, AUDIO, STREAMING, I/O, CONTROL, SERIAL, and SECURITY. The NETWORK tab is active, showing fields for IP Address, Netmask, and Gateway IP Address, each with four input boxes containing the number 0. There is also a "Use SonicIP®" option with radio buttons for Yes (selected) and No. At the bottom of the settings are "Apply" and "Cancel" buttons. On the right side, there is a "Help" section with a scrollable text area that reads: "Here you can configure the device's Static IP address. With this you can set a permanent IP address so that the device does not have to get a new one upon".

Next press the Audio settings text button and duplicate the settings shown below. Press Apply.

The screenshot displays the BARIX™ Device Configuration web interface. At the top, there is a header with the INSTREAMER logo, the title "DEVICE CONFIGURATION", and the BARIX™ logo. To the right of the header, system information is listed: MAC (0008E1007777), Firmware (V02.06 (07/31/2006)), Web application (V01.14), Bootloader (V99.10), Setup (V01.05), and Song (V03.03). Below the header are navigation buttons: SETTINGS, DEFAULTS, REBOOT, UPDATE, and HOME. The main content area is titled "SETTINGS" and has a sub-header with tabs for NETWORK, AUDIO, STREAMING, I/O, CONTROL, and SERIAL. The AUDIO tab is selected. The settings are as follows:

- Input source:  Line  SPDIF optical  SPDIF coaxial
- Channel Mode:  stereo  mono
- Encoding+Frequency: MPEG2 / 16 kHz
- MPEG Encoding quality: 0 Lowest
- Advanced Encoder Settings**
- A/D amplifier gain: -3 dB
- MP3 Frame CRC:  enable  disable
- MP3 Bitreservoir Mode:  used  kept empty
- MP3 Channel Mode Extension:  enable  disable MS-Stereo encoding
- MP3 Copyright Protection:  enable  disable
- MP3 Stream Type:  copy  original
- MP3 Emphasis: 50/15 us

At the bottom of the settings area are "Apply" and "Cancel" buttons.

Next press the Serial settings text button and duplicate the settings shown below. The local port is the IP port that you will connect to. You can make this any valid IP port on the network 1-32767. Write down the IP port that you are going to use and press apply.

MAC 0008E100777  
Firmware V02.06 (07/31/2006)  
Web application V01.14  
Bootloader V99.10  
Setup V01.05

SETTINGS DEFAULTS REBOOT UPDATE HOME

SETTINGS

NETWORK AUDIO STREAMING I/O CONTROL SERIAL

RS-232

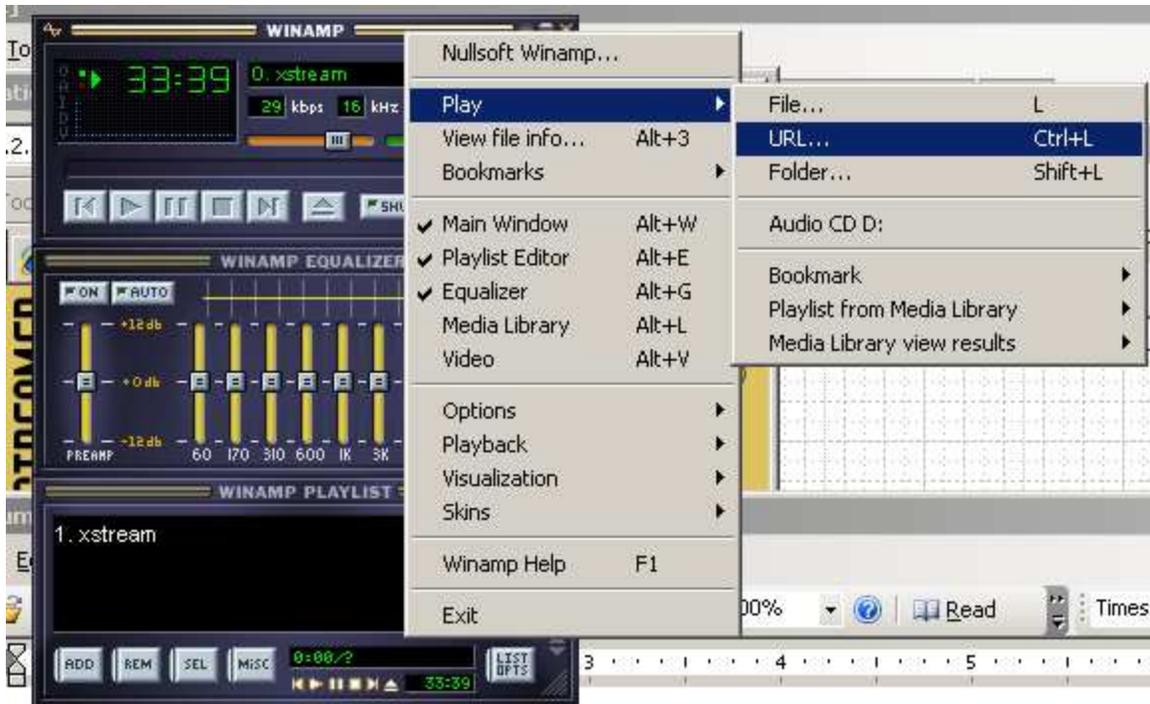
Baud rate 2400  
Data bits 8  
Parity no  
Stop bits 1  
Flow control none  
Local port 2101  
Destination IP 0 . 0 . 0 . 0  
Destination port 0

Apply Cancel

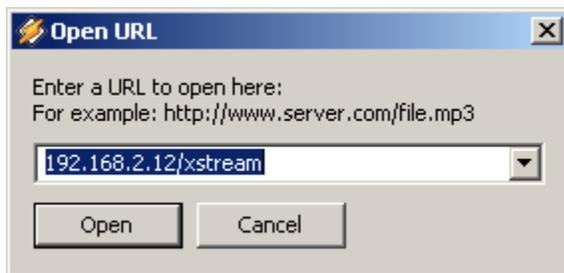
Close the browser. The Instreamer is now ready to operate.

### 3.3 Listening to the Audio

Listening to the audio on the computer requires an audio player capable of receiving and playing an audio stream. We suggest WinAmp ([www.winamp.com](http://www.winamp.com)). It is a free player and works very well. After you install WinAmp launch it and right click in the title bar as shown below and select Play ->URL.



Type in the IP address you noted earlier followed by /xstream as shown below.



Click Open and WinAmp will buffer the audio for a short period of time and begin playing the audio from the receiver connected to the direction finder.

### ***3.4 Configuring BearingTrack***

The Instreamer looks just like a network server to BearingTrack so simply set up the site as you would any Ethernet network connected device. A sample Site Editor setup window is shown below.

**Site Editor** [X]

Doppler

Receiver

None       AOR 5000  
 ICOM       AOR 8600

Enabled      DF Address: 01      RX Address: 4A

Position

	Dir	Deg	Min	Sec
Latitude	N	33	49	20.3
Longitude	W	111	55	08.2

Color: [Black]      Line Width: [1]      Rect Size: [Small]

Enable Modem Connection

Enable Internet Connection

IP Address: 192.168.2.7      Port: 2101

Ok      New      Delete