ACCREDITED SOLUTION

EXPLORER™500 – COMREX ACCESS Rack Stereo BRIC IP Codec

bgan | **inmarsat**

| Document Name: | EXPLORER™500 – COMREX ACCESS Rack Stereo BRIC IP Codec | Revision: | PA 1 |

Introduction:

This document describes how to configure the EXPLORER™500 and COMREX ACCESS Rack Stereo BRIC IP Codec to do voice broadcast via a 32 kbps streaming connection. The ACCESS is ideal to use with Thrane & Thrane EXPLORER™500 as the ACCESS uses approximately 24 kbps bandwidth to transmit a 20 Hz – 15 kHz mono signal.

Typical Applications:

► Radio Broadcast

Product Description:

ACCESS delivers mono or stereo audio streaming over Thrane & Thrane EXPLORER™500 BGAN Terminal. ACCESS uses Revolutionary BRIC Technology (Broadcast Reliable Internet Codec), designed to overcome the innate unreliability of the public Internet. This technology allows ACCESS to achieve unprecedented flexibility and reliability in the BGAN satellite IP environment.

ACCESS is also a full-featured POTS codec:
► Use ACCESS to make a POTS-to-POTS connection. Dial up a Comrex POTS codec (including Matrix, Vector or BlueBox).
► ACCESS can deliver 15 kHz Stereo on a single POTS line when connecting to another ACCESS.

Comrex contact details:

E-mail	mailto:techies@comrex.com
Phone	+1 978 784 1776
Web site	http://www.comrex.com

Thrane & Thrane contact details:

| E-mail | mailto:support@thrane.com |
Phone	+45 3955 8800
Fax	+45 3955 8888
Web site	http://www.thrane.com

Tested on products:

| EXPLORER™500 | Software version: 1.04 |
| Comrex ACCESS IP Codec | Software version: 1.1a |

Instructions:

The ACCESS was tested with the EXPLORER™500 in router mode. The ACCESS will work with EXPLORER™500 factory default settings. It is though recommended to establish a 32 kbps Streaming connection to ensure enough bandwidth over the satellite link.

The system overview is shown at the picture on next page.
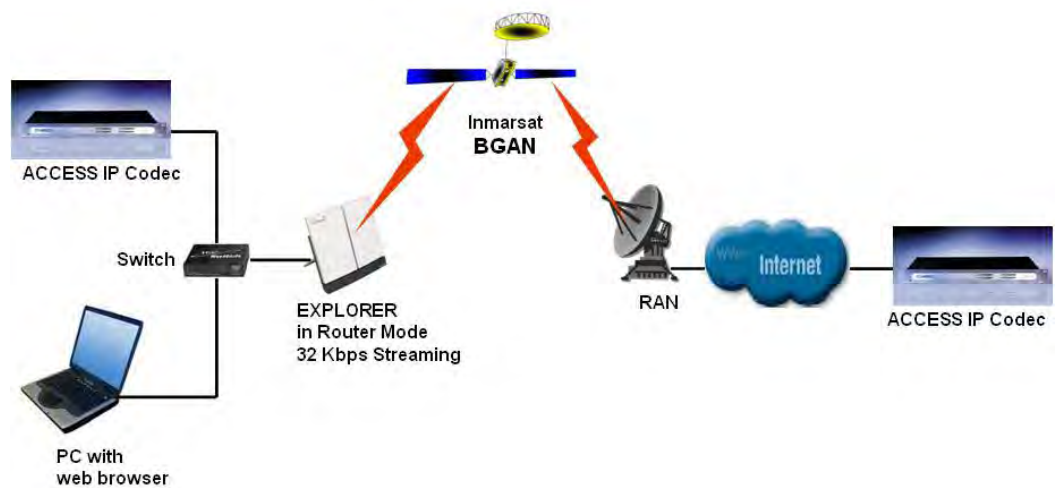
EXPLORER™500 Configuration

The next part will explain how to configure the EXPLORER™500 to connect with 32 kbps Streaming service. 32 kbps Streaming service is configured in the built-in web server of the EXPLORER™500 under LAN settings.
See picture below:

Remember to press APPLY and ACTIVATE button when changing Profiles in the web server.

For security reason Streaming contexts needs to be started manually. This is to ensure that the user does not forget it the next time he switches on the EXPLORER™500 as the Streaming service is billed by the minute.

START STREAMING 32 FROM LCD:

The 32 kbps Streaming can be started either from the LCD MMI or from the Home page in the built-in Web Server. Both ways are described below.
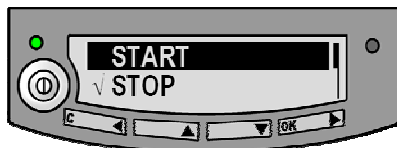
Goto main view of the LCD

Press Arrow Down button until CONNECT menu
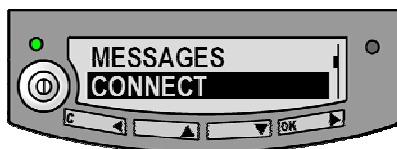
Press OK

Select STREAMING 32 and press OK button

Select START and press OK button

Press OK button to confirm 32 kbps Streaming connection and wait a minute or two to allow the EXPLORER™500 to register the Packet Switched connection with the BGAN system.
After registration the LCD main screen will show DATA ACTIVE. See LCD below.

START STREAMING 32 FROM WEB SERVER

The 32 kbps Streaming can be started from the built-in Web Server of the EXPLORER™500 by pressing the "Start Streaming 32" link in the bottom of the page. Se below screen dump.

To confirm to start the 32 kbps streaming press OK on the following pop up window

The information under ONGOING DATA SESSIONS in the built-in Web Server will in a minute or two show that the 32 kbps Streaming connection has been established. Please be aware that the web page needs to be refreshed manually using the Refresh button on the page or with the refresh function in the used web browser.
See example of a connection on the below picture.

CONFIG OF ACCESS:

Running Config requires that you attach a PS/2 style keyboard and video monitor to the appropriate jacks on the rear panel of ACCESS Rack. Remove and re-apply power after connection of a keyboard. After the system boots (and you see the Linux status messages stop scrolling) you will see the Main IP Address screen, as shown in below picture.
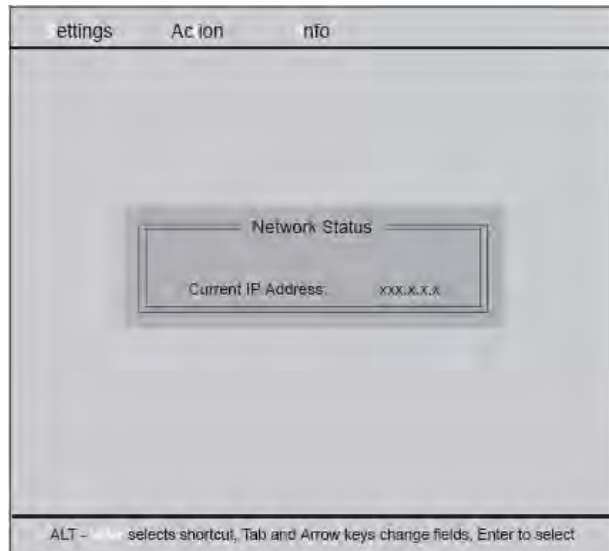

Enter the Config program by selecting Alt-S on the keyboard. Then scroll down to IP Networking (see picture below) and press the Enter key
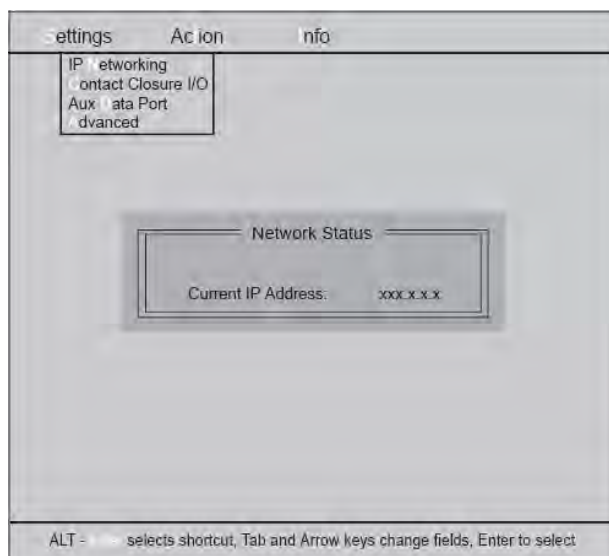
The IP Configure screen will appear as shown in the screen dump on next page. Press the Tab key to scroll between the options. First, tab to the top field to select Static IP addressing, then tab down to enter your fixed IP Address (192.168.0.10), your Netmask (255.255.255.0), and Gateway information which is the IP address of the EXPLORER™500 (192.168.0.1). If you know your DNS info you may enter it, or leave this field blank. Selecting OK will store the changes and return to the Main IP Address display.
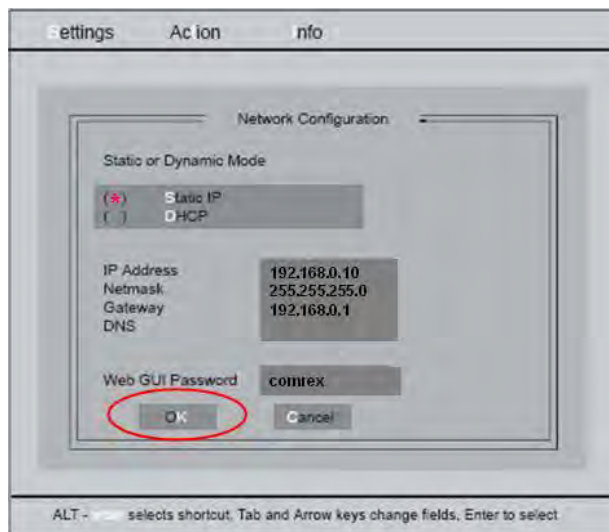
Connect the ACCESS, EXPLORER™500 and a PC with Ethernet cables through a switch.
See below illustration:
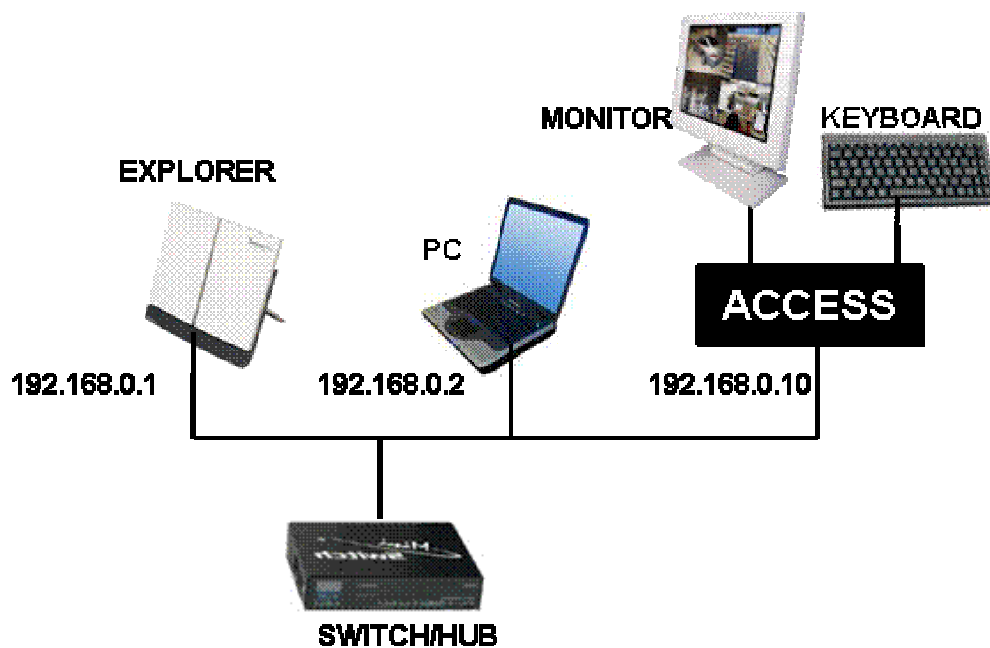
IP settings of the PC are recommended to be configured to DHCP so the PC gets its IP address from the
EXPLORER™500 DHCP server.
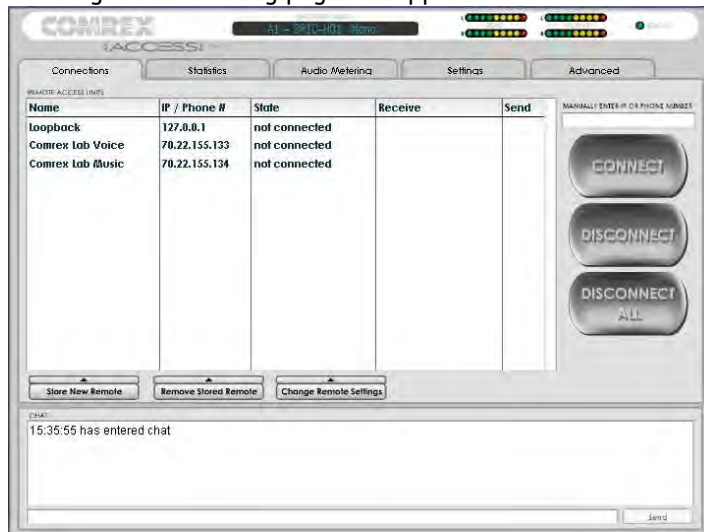
CONFIGURE BROADCAST CODEC:

In order to configure the broadcast quality and to start a broadcast it is necessary to start up a web browser on the PC.
Point the web browser on the PC to the IP address of the ACCESS (192.168.0.10).
The first web page that is shown will be the login screen. The default username is empty (no characters) and the default password is "comrex". See login screen below.


After login the following page will appear.

Press the Settings tab to configure the broadcast codec. The most common used settings for radio broadcast is to use BRIC HQ2 = B1-Mono with 8 frames per packet. These settings will offer 20 – 15 kHz mono signal transfer with use of approx 24 kbps bandwidth. This means that it will be possible to broadcast live radio over a 32 kbps Streaming connection on the EXPLORER™500.
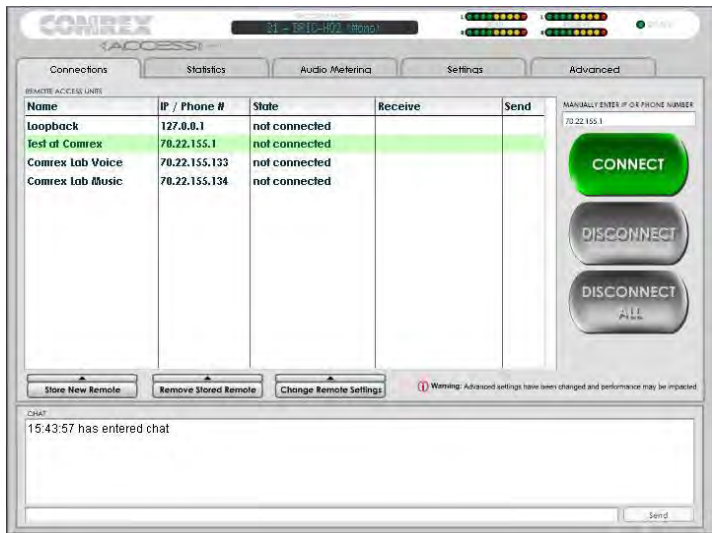See the two screen dumps below of where to configure these settings:
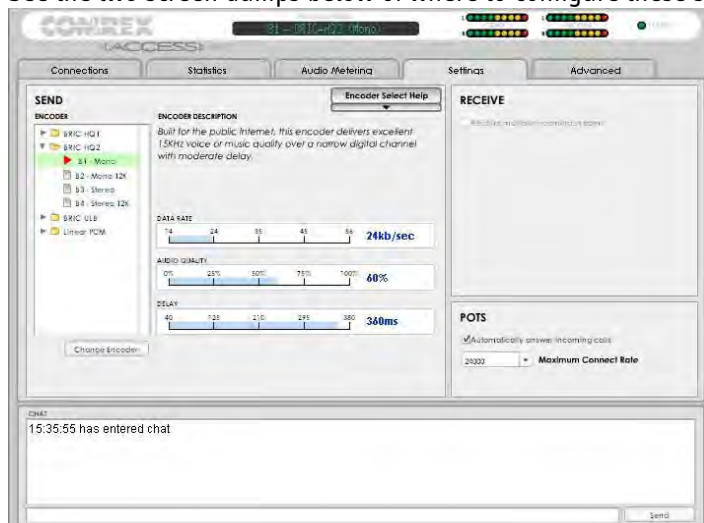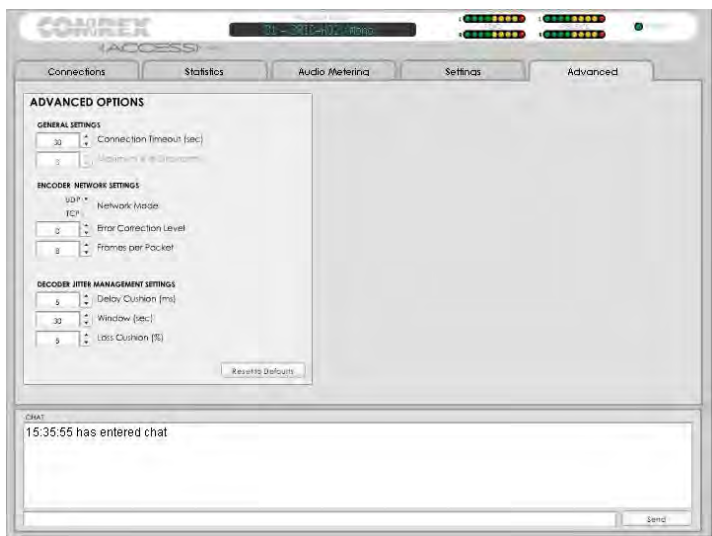
START BROADCAST: The ACCESS is now ready to start a broadcast. Enter the connection page and initiate the broadcast with the CONNECT button. See below screen dump.

The broadcast can also be initiated by use of a simple switch connected to the "Contact Closure 4 Input" via the male 9-pin sub-D connector on the rear of the ACCESS rack. Using that option will eliminate the use of a PC. See the ACCESS manual for further details of this feature.

Note: The broadcast was tested over a Standard and 32 kbps Streaming connections using an EXPLORER™500. The audio broadcast was transmitted to an terrestrial Internet address. The jitter was found to be less when the broadcast was done over the 32 kbps Streaming connection.
The test showed that the Thrane & Thrane EXPLORER™500 and Inmarsat BGAN network is working well as a transport media for the Comrex ACCESS IP Codec.
The test was done using an EXPLORER™500 but is assumed to work as well with EXPLORER™300, EXPLORER™527 and EXPLORER™700.

Tested: Henrik Møller, Technical Pre-Sales, Market Management