

Using AudiSoft Frontline Communicator over BGAN

Version 1.0

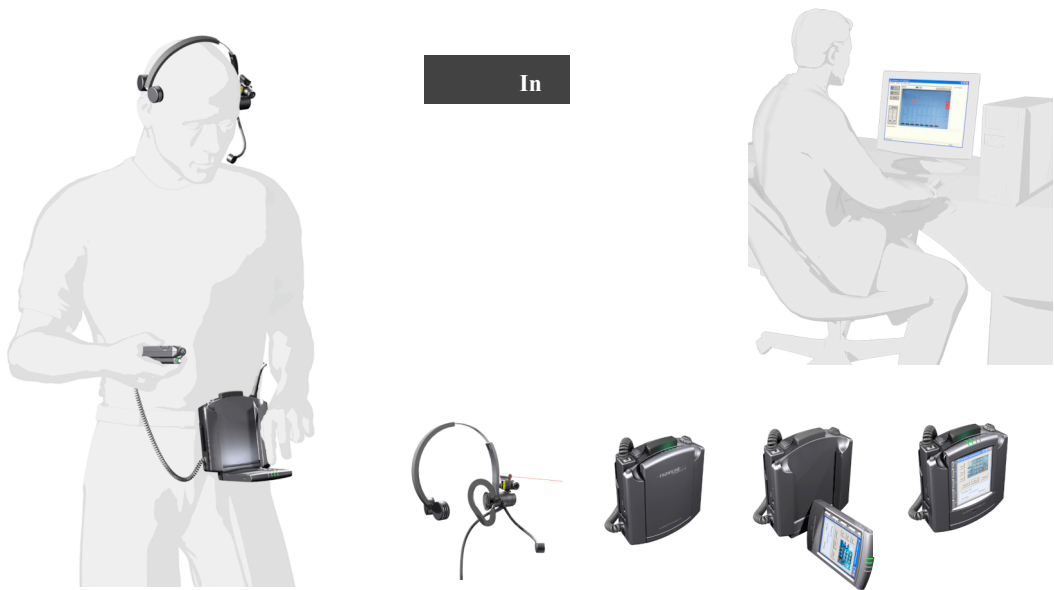
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This document provides recommendations on the use of the AudiSoft Frontline Communicator (called the Frontline Communicator in this document) over the BGAN network. It explains the features and benefits of the solution, how to set up the Frontline Communicator for use over BGAN, the equipment needed and customization required for use with BGAN.

1.1 Overview

The Frontline Communicator is a wireless and wearable audio/video over IP communication solution that blends well with BGAN portability. By adding real-time visuals to voice communication, this solution allows quick diagnosis and efficient decision making.

Small, lightweight, rugged and ergonomic, the Frontline Communicator fits in one hand and can easily be carried anywhere. The system is specially optimized to work over BGAN IP services. After initial set up, it can be rolled out quickly.

The combination of the Frontline Communicator and BGAN allows remote sites to be visually connected together at any time. The basic Frontline Communicator system allows point-to-point video communication. When used in combination with Frontline Central or Frontline Gateway, the Frontline Communicator becomes a powerful multipoint video communication solution and reunites team members located throughout the world.

The Frontline Communicator is also an open platform, and by connecting it to other devices (for example. GPS, RFID, autoscope, boroscope, oximeter, spirometer, ECG, bar code readers, and so on) you can personalize a solution to address a specific need.

1.2 Typical Users

The Frontline Communicator solution is used by the mobile workforce, experts and first responders in many these sectors, including:

- Manufacturing.
- Public Safety.
- Health.
- Oil & Gas exploration.

1.3 Product range

The Frontline Communicator is made up of the following components.

For point-to-point communication, the Frontline Communicator solution provides:

- One headset-camera.
- One transmission module.
- One handheld camera and connector cable.
- One Li-ion rechargeable battery.

For multi-point communication, the Frontline Communicator solution must be used with the additional components:

- **Frontline Central** – a powerful software addition to the Frontline Communicator. It enables one central computer to manage communications with many Frontline Communicator units, operating under different bandwidth conditions. Using Frontline Central, you may interact in real-time with a team of Frontline Communicator users dispersed throughout the world. In doing so, Frontline Central provides you with multiple points of view instantaneously, thus facilitating and accelerating the review and assessment of any situation.
- **Frontline Gateway** – a state-of-the-art collaborative tool that allows live video-communication between one Frontline Communicator user and up to 25 others. Using the Frontline Gateway, participants can guide the Frontline Communicator user onsite and immediately obtain the images they need to clearly evaluate a situation. They can also discuss and comment in real-time these images, manage a project from a distance, and offer rapid advice or a solution.

1.4 Key Features

The Frontline Communicator solution offers the following main features over the BGAN network:

- BGAN optimized profile, for easy selection between Standard IP and Streaming IP.
- Lightweight wearable system.
- Wireless and hands free system.
- Live transmission.
- Over IP communication:
 - Full duplex audio.
 - One way video.
- Dynamic adjustment to bandwidth.
- MPEG4 encoding.
- Embedded WiFi, Mesh compatible and adapted for BGAN networks.
- Dual camera system:
 - A light, discreet, ergonomic and comfortable headset-camera with integrated microphone and earphone.
 - A small handheld-camera (regular model, or high-end model with auto-focus, zoom and low light sensitivity)
- Snapshot and video recording.
- Open platform Windows CE 5.0 based for paperless applications/
- Multiple interface allowing the connection of other cameras or devices (composite input/output, s-video input/output, audio, USB, PCMCIA type I and II, SDIO, CF and RS-232)/

- Battery powered/

1.5 Benefits to BGAN users

The Frontline Communicator offers you the following main benefits:

- It is small, ergonomic, discreet and wearable. It allows true mobility.
- It enables clients to share audio, video and data information from anywhere in the world.
- It reduces the need to travel, allowing significant cost savings.
- It improves efficiency and productivity.
- It reunites teams in seconds and gives instant access to key resources.
- It enables rapid situation assessment or evaluation.
- It offers real flexibility and may be used with other cameras or devices.

1.6 Setting up

This section describes the initial setup of the Frontline Communicator over BGAN. It defines the network settings in the Frontline Communicator and the BGAN terminal.

Note Currently the Frontline Communicator has only been optimised for the HNS 9201.

1.7 BGAN Terminal Set up

Enable the WLAN interface on the terminal. Then, define the WLAN settings (SSID, security) for the interface using BGAN LaunchPad.

The Frontline Communicator relies on a network connection being present when a call is made. Inmarsat recommends that you set up your terminal to auto-connect on start up; the HNS 9201 can be configured to start up in an auto-connect mode.

Note the following

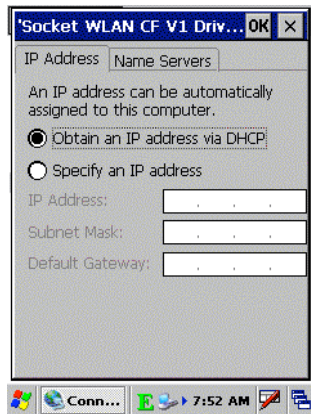
- On the HNS 9201 – If you use an external router, you can use BGAN LaunchPad on a computer to initiate the connection, which can then be shared by the Frontline Communicator to make a call. Router ports NAT and PAT must be configured to allow inbound video calls from the fixed to mobile direction. See the documentation supplied with your router for details.

Tip If you use the Frontline Communicator with the HNS 9201, and set the terminal to operate in auto-connect mode, make sure the Frontline Communicator has a static IP address of 192.168.128.101, with a Gateway of 192.168.128.100. This is because the HNS 9201 can only automatically activate the first IP context, and map that to the IP address 192.168.128.101.

1.8 Frontline Communicator Set up

To set up the Frontline Communicator:

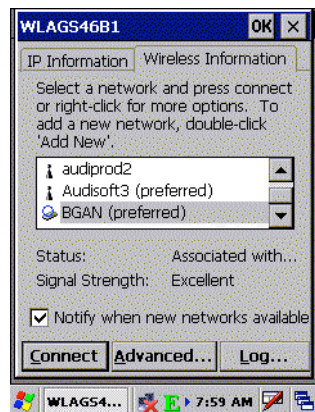
- a. Specify an IP address on the Frontline Communicator. To do this, in Connections choose the Specify an IP address radio button from the IP address tab (shown below):



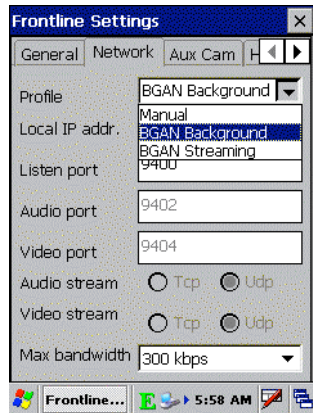
- b. Enter the following:

- IP address: 192.168.128.101
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.128.100

- c. Connect (associate) the Frontline Communicator to the BGAN terminal. To do this, in the IP Information tab, select the BGAN SSID, and click on Connect. The default BGAN terminal SSID is BGAN (as shown below).



d. Click on Menu > Settings > Network to access the Frontline Settings dialog box (shown below):



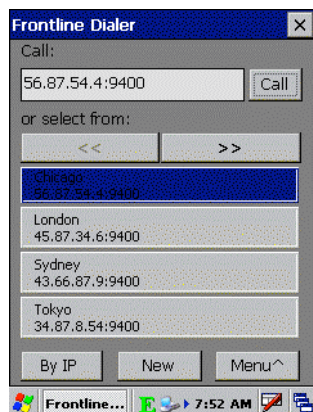
e. Select the profile and bandwidth according to the required BGAN service:

	BGAN Background	BGAN Streaming (128kbps)	BGAN Streaming (256kbps)
Profile	BGAN Background	BGAN Streaming	BGAN Streaming
Max bandwidth	100, 200 or 300 kbps	110kbps	220 kbps

1.9 PC Set up

To set up your PC for use with Frontline Communicator over BGAN:

- a. After terminal registration, activate the Frontline Communicator and call the remote PC (point-to-point communication) or the Frontline Gateway (multipoint communication) using its IP or DNS name.



1.10 Hints and tips

The following are best practice hints and tips to ensure you get the most from Frontline Communicator solution over BGAN:

- For higher video quality, use the 256kbps streaming IP connection.
- Inmarsat recommends that you do not disable AES encryption on the Frontline Communicator as it secures end point communication.

1.11 Technical Summary

The Frontline Communicator feature sets are summarized below:

Feature	Frontline Communicator solution for BGAN
Camera	Headset-camera, hardhat-camera, earmuff-camera and/or handheld-cameras
Camera zoom	40X zoom (10X optical, 4X digital)
Display	4" VGA (640x480) touch screen display
Video resolution	320x240 (QVGA)
Snapshot resolution	640x480 (VGA)
Video codec	MPEG4
Audio codec	GSM
Frame rate	Up to 15 fps
Latency	200ms excluding network latency
BGAN support	Support of BGAN Streaming and BGAN Background services
Video inputs/outputs	Composite, S-Video, PAL or NTSC
Recording capabilities	Snapshot feature, local recording and remote recording on PC
Bandwidth management	Automatically adjusts video transfer to the available bandwidth
Operating system	Windows CE 5.0
Interfaces	SDIO, CF, PCMCIA, USB, Serial (RS-232)
Wireless communication	Embedded 802.11b/g (WiFi certified)
	EDGE, UMTS and HSDPA Motorola MEA, Motomesh
Battery operation	Hot swappable Ion-Li battery for up to 2h30 of operation
Authentication	EAP-TLS, PEAP, MD5-Challenge
Built-in VPN	IPSec/L2TP, PPTP
Encryption	WPA, AES-128
PC application viewer	Windows 2000, XP
Multipoint communication	With Frontline Central and Frontline Gateway
Weight	700g
Dimension	148 x 134 x 49 mm

Further details and support

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