COBHAM

AVIATOR 200/300/350

User manual



AVIATOR 200/300/350

User manual

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Safety summary

The following general safety precautions must be observed during all phases of operation, service and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture and intended use of the equipment. Thrane & Thrane A/S assumes no liability for the customer's failure to comply with these requirements.



RADIATION WARNING

During transmission this system radiates Microwave power. High levels of radio frequency radiation are considered harmful to health. Although no single value has been agreed upon by all countries, the American National Standards Institute (ANSI/IEEE C95.1-1992) recommends that people should not be exposed to radiation stronger than 1 milli Watt per square centimeter at the frequencies used in this system. Accordingly, the operator of the system should ensure that no person should approach within 60 cm (AVIATOR 200), 110 cm (AVIATOR 300) or 200 cm (AVIATOR 350) from the sides and above the satcom antenna when the system is transmitting.

Radio frequency radiation exposure information:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 60 cm (AVIATOR 200), 110 cm (AVIATOR 300) or 200 cm (AVIATOR 350) between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Disposal



Old electrical and electronic equipment marked with this symbol can contain substances hazardous to human beings and the environment. Never dispose these items together with unsorted municipal waste (household waste). In order to protect the environment and ensure the correct recycling of old equipment as well as the re-utilization of individual components, use either public collection or private collection by the local distributor of old electrical and electronic equipment marked with this symbol.

Contact the local distributor for information about what type of return system to use.

About the manual

Intended readers

This manual is a user manual for the AVIATOR 200/300/350 system. The readers of the manual include aircraft personnel and passengers who want to use the SwiftBroadband Services.

For the daily use of the system there are no specific skills required. However, it is important that you observe all safety requirements listed in this manual, and operate the system according to the guidelines in this manual.

Note

The AVIATOR 200/300/350 system is available in two versions:

AVIATOR 200/300/350 approved to RTCA specification DO-178B level E and DO-254 level E

AVIATOR 200D/300D/350D approved to RTCA specification DO-178B level D and DO-254 level D.

In general descriptions the nomenclature AVIATOR 200/300/350 covers both versions. Where necessary, the Level D system is specified as AVIATOR 200D/300D/350D.

Manual overview

This manual has the following chapters:

- *Introduction* contains an overview of the SwiftBroadband services and a brief description of the system.
- *Get started* explains how to connect a PC and make the first call.
- *Operate the system* explains in detail how you can access the Internet, make phone calls, start a streaming session, send telefax and SMS messages.
- *Advanced use* provides detailed information on the web interface, the phone book and some administrative tasks.
- *Troubleshooting* contains information on how to get help and a short troubleshooting guide.
- *2-Wire Handset use* provides a description how to use the 2-Wire Handset.

Note that this manual does not cover the installation, configuration and setup of the system, nor how to customize the system for specific applications. For more detailed information how to customize the system to

specific needs, to set up interfaces and configure network setup and routing functionality see the AVIATOR 200/300/350 Installation and maintenance manual.

You find the part numbers for related manuals in the next section.

This manual may not always reflect the latest software functionality of your AVIATOR 200/300/350 system. To obtain the latest version of the manual, enter the Cobham satcom web site at: www.cobham.com/satcom, select **Service and support**, **Cobham SATCOM service and support**, **24-7 Self Service Center / Technical Downloads** and download the latest version of the manual, or acquire it from your distributor.

Software version

This manual is intended for the AVIATOR 200/300/350 system with the following software versions:

- AVIATOR 200/300/350 **(Level E)** software version: 1.09 (Level E) or higher[1]
- AVIATOR 200D/300D/350D **(Level D)** software version: 2.02 (Level D)
- AVIATOR 200D/300D/350D **(Level D)** software version: 4.00 (Level D) or higher

For older versions than the above mentioned some of the features are not supported.

1. This software version is not mandatory, but recommended.

Related documents

The below list shows the documents related to this manual and to the AVIATOR 200/300/350 system.

Title and description	Part number
AVIATOR 200/300/350 Quick Guide	98-127720
AVIATOR 200/300/350 Installation and maintenance manual	98-127093
AVIATOR Wireless Handset and Cradle, User Manual	98-129599
AVIATOR Wireless Handset and Cradle, Installation and Maintenance Manual	98-129600

Typography

In this manual, typography is used as indicated below:

Bold is used for the following purposes:

- To emphasize words.
  Example: "Do **not** touch the antenna".
- To indicate what the user should select in the user interface.
  Example: "Select **SETTINGS** > **LAN**".

Italic is used to emphasize the paragraph title in cross-references.

Example: "For further information, see *Connecting Cables* on page...".

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Introduction

Welcome

Congratulations on the purchase of your AVIATOR 200/300/350 system. This system is an aeronautical broadband system providing simultaneous high-speed data and voice communication via satellite through Inmarsat's SwiftBroadband (SB) services.

With SwiftBroadband the cabin applications e-mail, telephony, Internet and intranet access, VPN, video streaming etc. are available.

Telephone (secure)	Internet	Wireless	Email SMS	ISDN	Fax
					

In this chapter

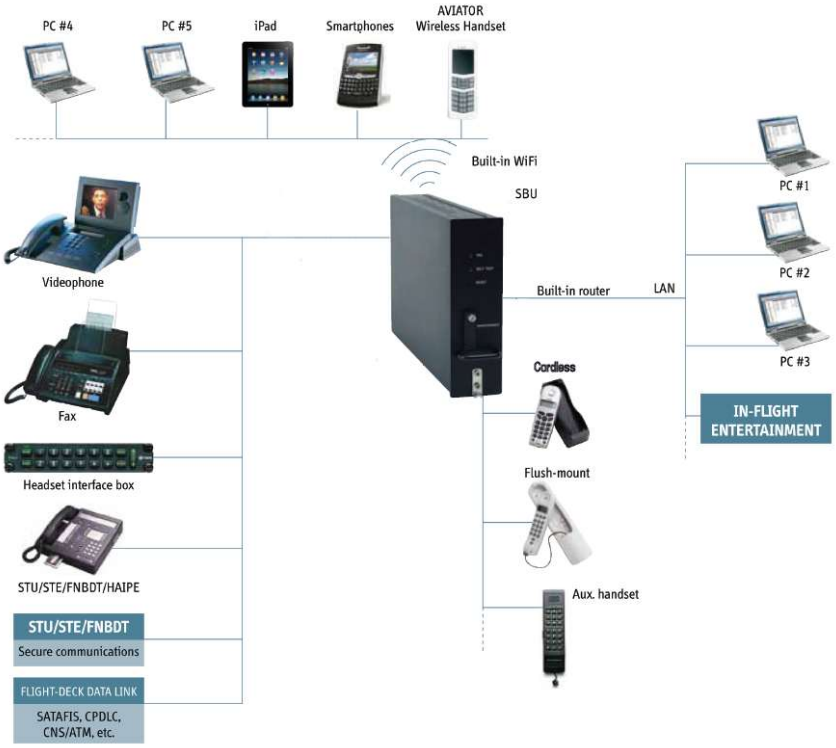
In this chapter you can read about:

- *Services, features and interfaces*
- *About SwiftBroadband*

Services, features and interfaces

Overview

The following drawing shows the AVIATOR 200/300/350 system with connected communication devices and available options:



Services

The SwiftBroadband services available depend on the type of antenna installed and the current elevation angle to the satellite. The following table shows the services available for the supported antenna types.

SwiftBroadband service	Satcom antenna		
	AVIATOR 200 LGA (Class 15)[a]	**AVIATOR 300** IGA (Class 7)	**AVIATOR 350** HGA (Class 6)
Standard IP background	Up to 200 kbps	Up to 332 kbps	Up to 432 kbps
IP streaming classes	8/16	8/16/32/64/128 kbps	8/16/32/64/128 kbps/ X-Stream
Circuit-switched standard voice	Yes	Yes	Yes
ISDN service or 3.1 kHz audio (Premium voice)	No	Elevation > 45°	Yes
Multi-voice: Number of voice calls	1+1 (best effort quality)	1+Up to 8 (best effort quality)	1+Up to 8 (best effort quality)

Table 1: SwiftBroadband services for supported antenna types

a. The elevation needed for services with this antenna type is > 20°.

For current support of Inmarsat services check at

www.inmarsat.com/aviation/complete-aviation-connectivity/swiftbroadband.

The current elevation angle is shown in the web interface of the AVIATOR 200/300/350.

SB-Safety Voice (ICAO Satvoice) is supported in software 2.02, Level D, refer to *SB-Safety Voice* on page 61.

Features

The AVIATOR 200/300/350 system has the following features:

- SwiftBroadband unit providing an 'always on' data connection of up to 432 kbps.
- Full duplex, single or multi-user
- Automatic satellite selection.
- Built-in PBX interfacing to two 2-wire connections, one ISDN interface and WLAN in the SBU, with integrated SIP server.
- Standard voice.
- 3.1 kHz audio for modems, G3 fax, 14.4 kbps high quality voice etc.[1]
- ISDN voice for Secure communication, G4 fax etc.[1]
- ISDN data for video conferences etc.[1]
- Built-in Router option with DHCP and Network Address Translation (NAT).
- Access to built-in web interface for daily use on all LAN connectors.
- Built-in Wireless option (WLAN) IEEE 802.11 b/g.
- Built-in Multi-voice option, up to 1 + 8 concurrent calls (from software 1.07 Level E, 2.01 Level D)
- Built-in web interface for configuration using the Maintenance connector on the SBU front plate.
- Remote management
- ACARS (from software 2.01 Level D)
- SB-Safety Voice (ICAO voice) (from software 4.0 Level D)

The AVIATOR 200/300/350 system does not affect the operation of an Iridium system.

1. AVIATOR 300 and AVIATOR 350.

Note The availability of some services depends on the installed satcom antenna. Check the section *Services* on page 3 for an overview of services available for the antenna types LGA, IGA and HGA.

Interfaces

The AVIATOR 200/300/350 system has the following interfaces:

- Two 2-wire connections for telephone
- One ISDN interface
- Six Ethernet interfaces
- One Wireless interface (WLAN) IEEE 802.11 b/g
- One Ethernet interface for system configuration on the SBU front plate (It is used for installation, service and maintenance. It is not used during flight time.)

Built-in router and Wireless options

The AVIATOR 200/300/350 system offers a built-in router as an option. With this option multiple users and applications can use the system simultaneously. Without this option only the first device that connects to the SBU will be allowed on the Internet.

The system also offers a built-in WLAN option for wireless communication devices and a WLAN antenna approved for aeronautical use. This includes full WLAN routing functionality.

If ordered, these options are enabled in the AVIATOR 200/300/350 from the factory. If these options are not included from the start, the system can be upgraded at a later stage. Then you receive the FLEX key for the purchased options and enter it in the AVIATOR 200/300/350 web interface.

PBX telephone exchange

The built-in PBX telephone exchange unit of the SBU connects two direct 2-wire POTS interfaces for faxes, handsets, headset interface boxes etc., as well as an ISDN interface for ISDN phones, fax machines or secure

communication. The built-in PBX of the SBU can route VoIP calls that are terminated in the SIP server of the SBU.

Tool for setup and use: The web interface

Use the built-in web interface of the SwiftBroadband Unit (SBU) to access the system settings. The web interface is accessed from a computer connected to one of the LAN connectors or using the WLAN interface of the SBU. The web interface is shown in an Internet browser. No additional installation of software is needed.



For further information on the web interface, see *Get to know the web interface* on page 66.

Handsets

The following handsets are recommended by Cobham SATCOM.

AVIATOR Wireless Handset and Cradle

The AVIATOR Wireless Handset is used to receive and make calls. The handset connects to a wireless access point using Wireless Local Area Networking (WLAN).



See the *AVIATOR Wireless Handset and Cradle, User Manual* for a description of the keys and LEDs of this handset and how to make calls.

TT-5621B 2-Wire Handset and TT-5622B 2-Wire Cradle

The 2-Wire Handset is used to receive and to make calls.



See *2-Wire Handset use* on page 103 for a description of the 2-Wire Handset and how to use it.

Sigma[7] handset and cradle

The Sigma[7] handset is used to receive and to make calls.



See the separate user manual for a description of how to use the Sigma[7] handset.

ICG DECT Cordless handset

The ICG DECT Cordless handset system is used to receive and to make calls.



See the separate user manual for a description of how to use the ICG DECT Cordless handset.

About SwiftBroadband

Geostationary Inmarsat satellites

The Aero SwiftBroadband services are based on 4 geostationary satellites situated above the equator. Geostationary means that the satellites are stationary in relation to Earth, i.e. they rotate at a speed that matches the rotation speed of the Earth. Each satellite covers a certain area, this is also called a footprint. It supports a number of powerful narrow-spot-beams making the SwiftBroadband service available virtually anywhere on the earth, this is shown on the coverage map on the next page.

The satellites are your connection to the Internet and telephone networks, and they are run and managed by Inmarsat. Inmarsat is the leading provider of global mobile communications services. Inmarsat keeps track of which SwiftBroadband Units are logged on to the system, assigns a free channel and manages the data when a network connection is established or a call is made.

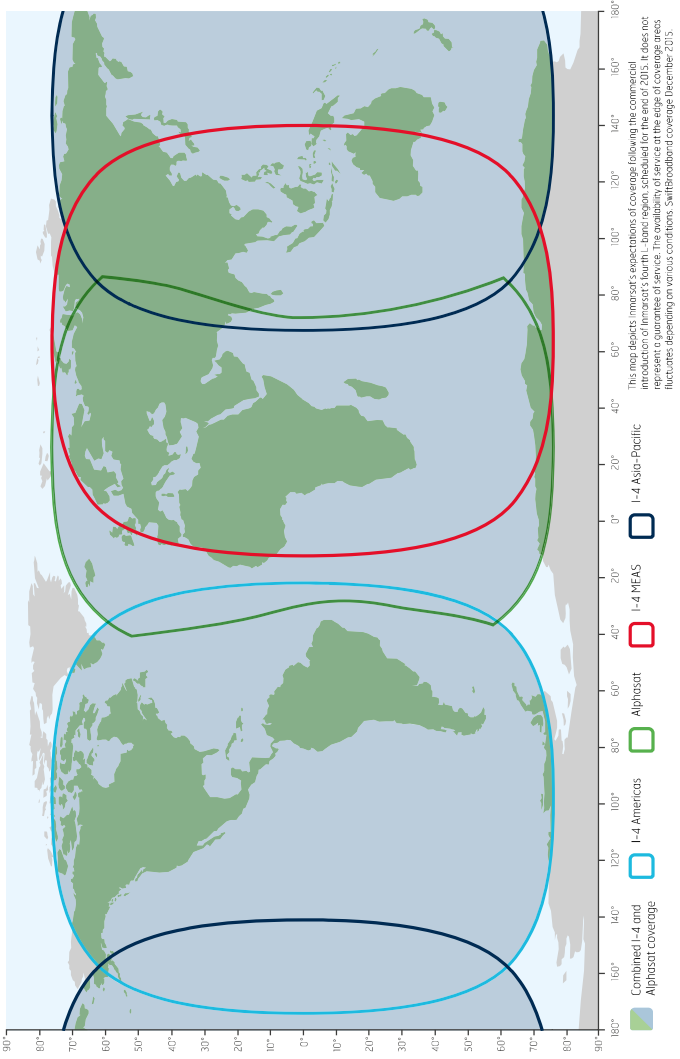
SwiftBroadband coverage

The SwiftBroadband service is a mobile satellite service that offers high-speed data up to 432 kbps (512 kbps with X-Stream), voice telephony and ISDN. Using this service users can access e-mail, corporate networks and the Internet, transfer files and make telephone calls.

The SwiftBroadband service by Inmarsat is accessible worldwide, except the extreme polar regions. It is covered by the four satellites. The following figure shows a world map with the areas covered by each of the I4 satellites.

Inmarsat's I4 satellite coverage (AMER, EMEA/Alphasat, MEAS, APAC)

Note that some of the SwiftBroadband services for AVIATOR 200 and AVIATOR 300 require a certain elevation angle. See *Services* on page 3.



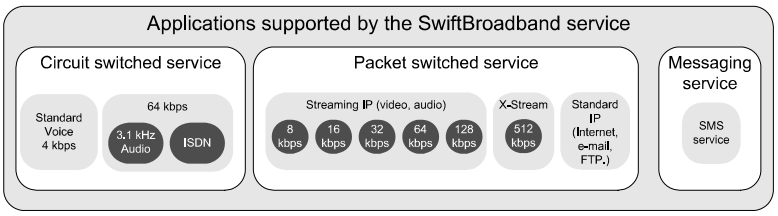
Note The map shows coverage for SwiftBroadband. The map does not represent a guarantee of service. The availability of service at the edge of coverage areas may fluctuate.

SwiftBroadband services

SwiftBroadband consists of the basic services:

- Symmetric 'always on' data connection, packet switched (PS)
- Voice and ISDN (voice and data) service, circuit switched (CS)
- Short Messaging Service (SMS)

The following figure shows how the services are accommodated in a SwiftBroadband channel.



With SwiftBroadband you can combine multiple packet-switched services with one circuit-switched service active at the same time.

Limitations

Limitations for the services with AVIATOR 200, AVIATOR 300 and AVIATOR 350 are listed in *Services* on page 3.

Circuit switched (dialed) service

SwiftBroadband also provides high-quality telephone services (including secure mode). The following types of circuit switched connection are available:

- **Standard voice.** A connection for voice only. The voice signal is compressed to 4.0 kbps, which reduces the bandwidth use and consequently the cost. This is also called AMBE2.

- **3.1 kHz audio** [1] (Premium voice). A high quality connection which can be used for Premium Voice, G3 fax or analog modems. The signal is uncompressed 3.1 kHz audio, which allows for optimum voice quality.
- **ISDN** [1]. A high quality connection which can be used for voice (3.1 kHz Audio), G4 fax or 64 kbps UDI/RDI data.

Packet switched service

The IP-based packet-switched service provides a data rate of up to 432 kbps. The packet switched service offers two types of connections: In **Standard IP** mode, the service is shared among users of the system, providing a 'best effort' service. This type of connection is ideal for e-mail, file transfer, and Internet and intranet access. The user pays for the amount of data sent and received. This type of connection is also called Background IP.

You can also use the SwiftBroadband service at a pre-determined quality of service, i.e. a specified streaming data rate. This service is called **Streaming IP**. This type of connection is ideal for time critical applications like live video over IP. The user pays for the duration of the connection (per minute charge). For streaming classes supported see *Services* on page 3.

Note The AVIATOR 200/300/350 system supports up to 11 concurrent packet-switched connections at a time. For use of packet switched services also see *Features* on page 4.

1. ISDN services and 3.1 kHz audio (Premium voice) are available for elevations higher than 45 degrees for systems with an IGA, i.e. AVIATOR 300. ISDN services and 3.1 kHz audio (Premium voice) are not available for AVIATOR 200.

Messaging service

SwiftBroadband provides a generic messaging service for sending and receiving messages to and from the AVIATOR 200/300/350 system.

Supplementary telephone services

The following supplementary telephone services are available:

- Call hold
- Call waiting
- Call forwarding
- Voice mail
- Call barring

These services are typically set up during the initial configuration of the system. For further details on Call forwarding see *To forward a call* on page 47, the other supplementary telephone services are described in detail in the AVIATOR 200/300/350, Installation and maintenance manual.

Service Provision for SwiftBroadband

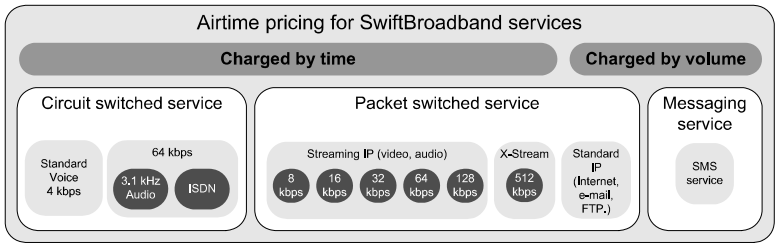
Before you can use the SwiftBroadband service you must have a contract with an Inmarsat service provider (ISP). The service provider provides the telephony and data services and invoices you for the services used. For information on Service Providers who will provide you with easy and reliable satellite communications services go to www.cobham.com/satcom, then Where to buy, AVIATOR, EXPLORER, SAILOR and Sea Tel branded product resellers.

Note that the use of the X-Stream service must be activated by your service provider.

Airtime pricing principles (charged by time or volume)

When using the system note that the circuit switched services and streaming classes (packet switched) are charged by the **time** the service is being used, while the standard IP and SMS services (packet switched) are charged by the **volume of data** transferred or number of messages sent.

The following image shows how the various applications are supported by the SwiftBroadband service.



For information on service availability see *Services* on page 3.

Get started

In this chapter

In this chapter you can read about:

- *Access Internet, e-mail, etc.*
- *Make the first call*

For information on how to install, configure and service the system, see the AVIATOR 200/300/350 Installation and maintenance manual. You find more detailed guidelines on the applications in *Operate the system* on page 23.

SB-Safety Voice (ICAO Satvoice) is supported in software 2.02, Level D, refer to *SB-Safety Voice* on page 61.

Line of sight

To use the satellite network, the AVIATOR 200/300/350 satcom antenna must have free line of sight to the satellite.



Picture: airphototicino

Note The system cannot communicate with the satellite and go online when the aircraft is inside a hangar.

Availability of airtime services

To be able to establish a data connection or make a call the SIM card installed in the AVIATOR 200/300/350 system must be activated by a service provider. This is taken care of during installation and configuration of the system. The service provider handles SwiftBroadband system activation, billing and technical support that is related to the communication network. For information on service providers go to Inmarsat's web site, Partner search (http://www.inmarsat.com/partners/search-for-partner/).

The AVIATOR 200/300/350 system is operational and ready to use when the aircraft is powered up and the aircraft's navigational system has finished its initialization. Check whether your aircraft is equipped with a sign saying that the satcom system is ready for use before you start your application.

System default settings

The telephone (2-Wire) and ISDN lines are available as soon as the system has registered with the SwiftBroadband service.

Per default Internet, e-mail and other IP services are available as plug-and-play, no further configuration is needed. The system is set up to automatically start the standard background IP connection when connecting a PC, Smartphone or other device using Ethernet or WLAN.

Important

With the plug-and-play functionality a computer automatically establishes a connection to the Internet and starts transferring data as soon as you start using the Internet, e-mail or other IP services. See *Unintended use of bandwidth* on page 30 for information how to set up your computer to avoid unintended and possibly costly use of bandwidth.

Access Internet, e-mail, etc.



PC setup - before you start

For the LAN or WLAN interface to work without any further setup, the connected computer or IP device must be set up to obtain an IP address and a DNS server address automatically. This is usually the case for most PCs. If you are in doubt you can check your PC, see the step-by-step procedure how to do this in *IP address and DNS server address setup* on page 68.

Important To optimize airtime and bandwidth usage we recommend to **disable** the feature for **automatic PC software update** in your computer.

Internet, e-mail etc.

With SwiftBroadband the cabin applications e-mail, Internet and intranet access, VPN, etc. are available. The connection type recommended for these applications is the Standard data connection, which is also the default setting. For a more detailed description of the Standard data connection see *Packet switched service* on page 11.

Depending on how your system was set up initially there are two scenarios that may be applicable when you use a data connection to access the Internet, e-mail etc.:

Standard data connection	Benefits	Drawback
Automatic start (system default)	Plug-and-play	Risk of unintended use of costly airtime, i.e. Windows update downloads, frequent check for new mail etc.
Manual start from the web interface (This must be configured during initial configuration)	Efficient bandwidth usage	You must start the web interface at **http://192.168.0.1** and click once to start a connection. Online software updates of the connected devices (PC, smartphone etc.) should only be performed when you are connected at the office or at home where bandwidth and airtime are less costly. Check the documentation for the device how to disable automatic software updates.

Check with your system responsible whether your system is set up to automatic activation of a standard data connection (plug-and-play).

Practical instructions

To access the Internet or use your e-mail program do as follows:

1. Switch on your PC, PDA or Smartphone.
2. **For LAN**: Connect your LAN cable (standard Ethernet) between the network connector on your computer and one of the LAN connectors installed in the aircraft.

   For WLAN: Check that the WLAN icon in the status bar of your operating system indicates that the WLAN connection has been established.

   Note To access the WLAN for the first time you must enter the Network Name (**SSID**) and the encryption key, if any.

WLAN access details	Your AVIATOR system
Network Name (SSID)	
Encryption key	

3. Start your application, e.g. Internet browser or e-mail program.

   If you cannot establish a connection, the automatic activation of a standard data connection may be disabled in your system. Then you can start a connection manually.

   How to establish a connection manually see *Start or stop a Standard connection* on page 32 or *Start or stop a Streaming connection* on page 33 for detailed instructions. To learn more about the web interface see *Access and navigate the web interface* on page 69.

   If you want to change the start-up mode of the standard data connection contact your system administrator to change the setting in your network user group for **Automatic activation** to **Enabled** or **Disabled**. This is described in detail in the AVIATOR 200/300/350 Installation and maintenance manual.

Make the first call



Introduction

The following sections provide a short guide to making calls. For more detailed information, see *Make or answer a phone call* on page 38.

If you want to use a SIP-enabled IP handset to make a call see *Use a SIP-enabled IP handset or smartphone* on page 51.

Make a call (air to ground)

To make a call from a phone or handset connected to the system, press

00 <country code> <phone number> followed by **#** or off-hook key.

Example: To call Cobham SATCOM VA in USA that has the country code 1 and the phone number 7574639557 press
00 1 7574639557 #

Call a handset in the aircraft (ground to air)

You find the voice numbers in the documentation in the aircraft cabin or from your service provider. They may also figure on the quick guide. Make sure you have the international dialling code for the country you want to call from.To make a call to a phone connected to the AVIATOR 200/300/350 system (ground to air), dial

+ <Mobile number>

- **+** is the prefix used in front of the country code for international calls. The Prefix depends on from which country you make the call. It is 011 if you call from the USA.
- **Mobile number**: The mobile number of the system you are calling. The first part of the number is always 870, which is the “country code” for the SwiftBroadband system.

Note There are two Voice numbers, one for 3.1 kHz Audio and one for Standard Voice.

Example: If you are calling from the USA and the mobile number for standard voice is 870772420567 on your system, and you want to make a call to the system, dial **011 870 772420567**.

Note If you have connected a fax, make sure that the incoming call type on that 2-wire interface is set to 3.1 kHz Audio. This is to avoid that the fax rings and answers an incoming Standard call. This is usually taken care of during initial configuration of the system. See the AVIATOR 200/300/350 installation and maintenance manual for further information.

Voice mail for SwiftBroadband

If a call to the AVIATOR 200/300/350 system is not answered the caller can leave a voice mail message with Inmarsat's voice mail service. Then an SMS is sent to the AVIATOR 200/300/350 messaging system to alert you that there is a voice mail message. For further details see *To receive a voice mail message* on page 41.

Make a call from one AVIATOR system to another

To make a call from one system to another, press **00 <Mobile number>**.

Operate the system

In this chapter

In this chapter you learn in detailed step-by-step descriptions about:

- *Use a computer* (most common applications)
- *Use a phone or fax machine*
- *Use a SIP-enabled IP handset or smartphone*
- *SMS service*
- *SB-Safety Voice*

Selected scenarios

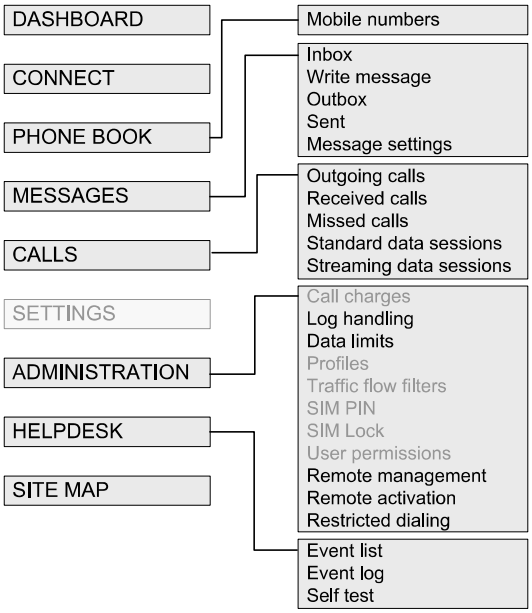
The application examples in this chapter are mainly based on the default configuration and some typical application scenarios. If you have specific requirements to the interface setup and configuration of your system refer to the AVIATOR 200/300/350 Installation and maintenance manual.

Tool for setup and use: The web interface

Use the built-in web interface of the SwiftBroadband Unit (SBU) to access the system settings. The web interface is accessed from a computer connected to one of the LAN connectors or using the WLAN interface of the SBU. The web interface is shown in an Internet browser. No additional installation of software is needed.

In this manual you find information and instructions for the parts of the web interface that you might need when using the system. The parts of the web interface that deal with installation, configuration or maintenance are described in detail in the AVIATOR 200/300/350 Installation and maintenance manual.

The following drawing shows the menus available in the web interface. The topics in gray are mainly used during installation and maintenance of the system, they are described in detail in the AVIATOR 200/300/350 Installation and maintenance manual.



The gray topics are mainly used during installation and maintenance. They are described in detail in the Installation and maintenance manual.

For more detailed information about using the web interface see *Advanced use* on page 65.

Services and interfaces

The following table shows the supported combinations of services and interfaces, and which types of equipment can be used.

Service		Interface on the system		
		Phone/Fax (RJ 11)	LAN (RJ 45) or Wireless	ISDN (RJ 45)
Circuit Switched	3.1 kHz Audio (Premium voice)[a]	Analog telephone	SIP-enabled IP handset	ISDN telephone
		G3 Fax machine		G4 Fax machine (If it supports G3 Fax)
		Secure telephone STU/FNBDT		
	Standard Voice (AMBE)	Analog telephone	SIP-enabled IP handset	ISDN telephone
	Data, UDI or RDI[ab]			G4 fax machine, computer with ISDN interface or secure communications
Packet Switched	Data multi-user		Computer or smartphone	
	Data single-user		Computer or smartphone	
	Multi-voice		SIP-enabled IP handset	
SMS			Computer with web interface	

a. AVIATOR 300 with IGA (Class 7): Elevation angle must be larger than 45°.
AVIATOR 200 with LGA (Class 15): This service is not available.
For current support of Inmarsat services check at http://www.inmarsat.com/Services/Aeronautical/SwiftBroadband/.

b. Check with your service provider that the RDI service is available on the Ground Infrastructure network.

Use a computer



LAN and WLAN interfaces

If the Built-In Router option is activated in your system you can connect several PCs and other IP devices to the AVIATOR 200/300/350 system. Then the system operates as a router. It handles IP data traffic so the AVIATOR 200/300/350 system can be used with multiple computers for e-mail, Internet access, VPN, intranet and other applications that use the packet switched connection.

If you have purchased the Wireless Option you can connect multiple computers and other IP devices to the system via the Wireless Access Point. For more information on these options see *Built-in router and Wireless options* on page 5.

To connect a computer to the AVIATOR 200/300/350 system you have several possibilities:

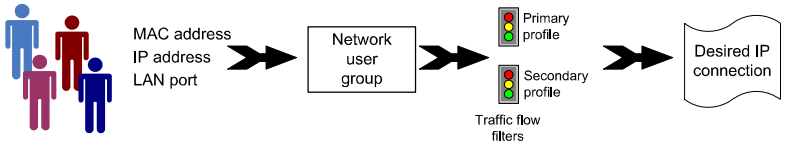
- Use one of the six LAN connectors (Ethernet) to connect user computers or other LAN equipment. Check how many of the LAN connectors are available in your installation and where to find them in the cabin.
- If available, use the Wireless Option to connect computers and other devices using IP to the network. For this you need the network name (SSID) and encryption key, if any.

There is also the front Maintenance connector on the front plate of the SwiftBroadband Unit. This connector may not be accessible during flight. It is reserved for service and maintenance purposes.

Customize network use

With the built-in router functionality the AVIATOR 200/300/350 system offers a flexible use of the data channel of the SwiftBroadband service. The system administrator can configure the use of the data channel by defining

network user groups and profiles. The following picture gives an overview over the parameters and functions involved.



An IP device that is connected to the AVIATOR 200/300/350 system will automatically be assigned to the default network user group, if it is not specified otherwise. The default setting of this group is a standard data connection with automatic IP address allocation and automatic activation of the connection.

The AVIATOR 200/300/350 system is flexible and can be configured to specific requirements for your network use, e.g. manual activation of the Internet connection, activating video streaming, a server on the network or a fixed IP address on one of the devices. For this you need to set-up network groups with specific primary and/or secondary profiles. You can find detailed description in the AVIATOR 200/300/350 Installation and maintenance manual.

Network user groups

To manage the use of the bandwidth and the applications allowed for the individual user the system administrator can set up network user groups. The following paragraphs describe how network user groups are used in the AVIATOR 200/300/350 system.

When you connect an IP device (a computer, smartphone, etc.) to the AVIATOR 200/300/350 system the system will find out which network user group the device belongs to. To do this the system uses the following information:

- The port the device is connected to, i.e. one of the 6 Ethernet ports, Wireless or the SBU maintenance connector (reserved for service and maintenance).
- The device's IP address.

- The device's MAC address.

In the default configuration of the network user group called DEFAULT GROUP a specific IP address or the unit's MAC address are typically not needed. The DEFAULT GROUP uses the background IP data connection.

If you want to read more about how to customize the system and how to set up network user groups and traffic profiles to meet specific data traffic requirements see the AVIATOR 200/300/350 Installation and maintenance manual.

Connect to the Internet

You can connect your PC or other IP devices e.g. your smartphone to the Internet and use e-mail, VPN, file transfer applications etc. The following sections describe two typical applications: Starting a standard data connection and a streaming data connection.

Access the web interface in the AVIATOR 200/300/350 system

When the computer and the AVIATOR 200/300/350 system are ready you can access the built-in web interface of the system to display various information, use the SMS service or start and stop a data connection.

To check the connection of your computer to the web interface of the system do as follows:

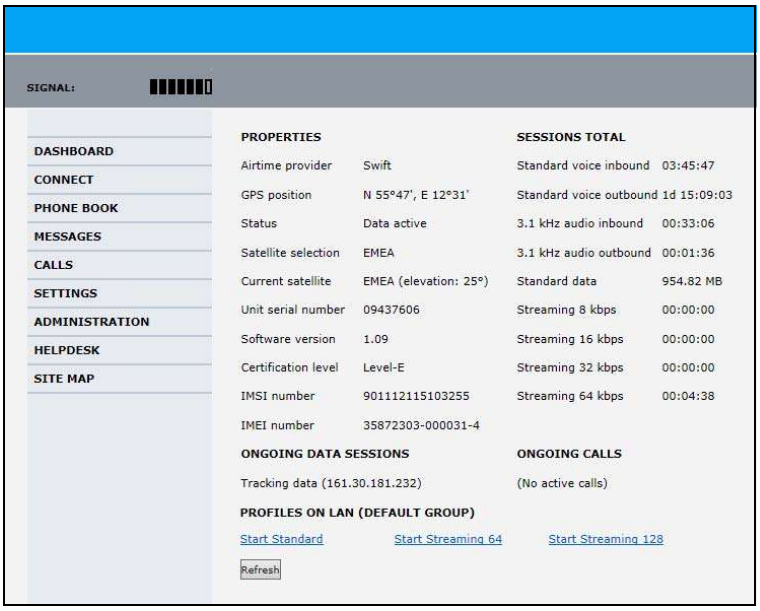
1. Power up your computer.
2. **For LAN**: Connect your LAN cable (standard Ethernet) between the network connector on your computer and one of the LAN connectors installed in the aircraft.

   For WLAN: Check that the WLAN icon in the status bar of your operating system indicates that the WLAN connection has been established.

   Note To access the WLAN for the first time you must enter the Network Name (**SSID**) and the encryption key, if any. For further details see *WLAN access details* on page 19.
3. Open your Internet browser and enter the default IP address of the AVIATOR 200/300/350 system: **http://192.168.0.1**.

You may have to disable the Proxy server settings in your browser. For further information, see *Proxy server settings* on page 67.

4. The web interface opens and the page **DASHBOARD** is displayed. On the Dashboard you see the current system information (Example below: AVIATOR 300).



You can configure the system to your specific requirements. This is typically done during the installation and initial setup of the system. See the AVIATOR 200/300/350 Installation and maintenance manual for detailed information how to customize the interfaces of the system and how to set up network user groups and profiles to manage data traffic and bandwidth usage.

Unintended use of bandwidth

The system default setting is automatic activation of a standard data connection. With this setup you connect the PC to the cabin network and start using the applications. You do not have to connect to the web interface to start using the services, it is plug-and-play. This setting involves a high risk of being charged for airtime and bandwidth when connected computers perform automatic software updates. These updates are not limited to the Windows system itself, but also other installed programs (e.g. browsers, Java and Media or Flash players) might do updates. Some do updates even without prompting before the download is complete.

Note Online software updates of the connected devices (PC, smartphone etc.) should only be performed when you are connected at the office or at home where bandwidth and airtime are less costly. Check the documentation for the device how to disable automatic software updates.

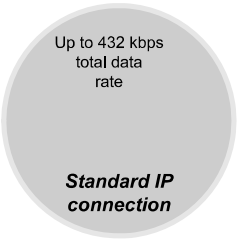
To avoid unintended use of bandwidth through automated background services the system can be set to **not** automatically connect to the Internet when you connect your computer or other IP equipment (PDA, smartphone, webcam, etc.) to the network interface. You set this in the web interface.

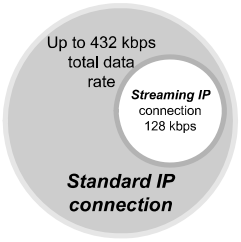
However, selecting manual activation alone will not prevent these updates, but only delay them until the connection is activated. The only way to be sure is to disable updates in all programs, which can be a difficult task. Please check with you IT department for assistance on this. If you want to start a data connection in this mode you must access the system's web interface and activate your data session, standard IP and/or streaming IP, from the Dashboard.

Note **Optimize airtime and bandwidth usage**: You are charged for the bandwidth used for automatic software updates. We recommend to disable this feature in your computer.

You can set a limit for the use of data services that can be downloaded over the AVIATOR 200/300/350 system for safeguard against unintended use of bandwidth. For further details see *Set data limits* on page 83.

Understand Standard and Streaming data connections





The SwiftBroadband network supports two types of IP data connections to the Internet: Standard data and Streaming data. The figures on this page show how the bandwidth of up to 432 kbps is used when set-up as Standard connection (left) and as Standard and Streaming 128 kbps (right).

- With a **Standard data** connection all users that have signed on the network share the bandwidth available. This type of connection is ideal for TCP/IP traffic such as e-mail, file transfer, and Internet and intranet access. Standard data services are charged by the volume of data transferred.
- With a **Streaming data** connection you get a guaranteed, high-priority connection, ensuring seamless transfer of data with guaranteed bit rate and Quality of Service. This type of connection is ideal for time-critical applications like live video over IP. Streaming classes are charged by the time the service is being used (per minute charge).

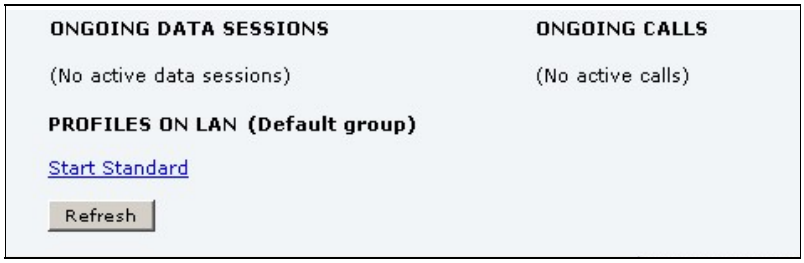
Important You must always close the Streaming connection manually to finish the connection properly. You must click **Stop streaming** in the web interface to close the streaming connection. It is not enough to disconnect the equipment. As long as the connection is active you are charged for the service.

The system administrator can set up various types of connections using network user groups, profiles and traffic flow filters. For information how to define these most appropriately see the AVIATOR 200/300/350 Installation and maintenance manual.

Data sessions available for the current user are displayed under **PROFILES ON LAN** or **STREAMING PROFILES ON LAN** at the bottom of the **Dashboard**.

The AVIATOR 200/300/350 system supports the use of network user groups. These network user groups define which type of IP connections are allowed for each group. Each network user group has then one or more profiles for various applications. You can only see, start and stop profiles of the network user group you belong to.

Note The system administrator can start and stop data sessions for all users in the network user groups. For further information, see *Start or stop any data session* on page 80.



- Primary profiles are listed in the left side and secondary profiles (if any) are listed to the right.
- Profiles that are currently active are displayed as a link with the text “Stop <name of profile>”.
- Profiles that are ready to be activated are displayed as a link with the text “Start <name of profile>”.

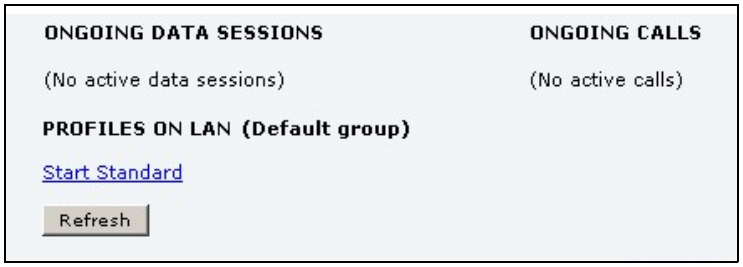
Start or stop a Standard connection

On the Dashboard you can see under PROFILES ON LAN whether a standard connection is active or not.

To start or stop a Standard connection for your Network user group do as follows:

1. Open your Internet browser and enter the IP address of the AVIATOR 200/300/350 system (default: http://192.168.0.1) to access the Dashboard of the web interface.
2. Locate **PROFILES ON LAN** at the bottom of the page.

3. Click **Start <name of profile>**, in this case: **Start Standard**, or **Stop <name of profile>** to stop the connection.



4. Click **Refresh** to update the current state of the connection(s). Note that there might be some latency when updating the connection status, you might have to wait and click **Refresh** again to update the Dashboard to the current state.

Start or stop a Streaming connection

The AVIATOR 200 is limited to the streaming classes 8 and 16 kbps.The AVIATOR 300 supports the streaming classes 8, 16, 32, 64 and 128 kbps. The AVIATOR 350 supports the streaming classes 8, 16, 32, 64, 128 kbps and X-Stream. Note that streaming classes are charged by the time the service is being used (per minute charge). A started Streaming session will stay active until you manually stop it.

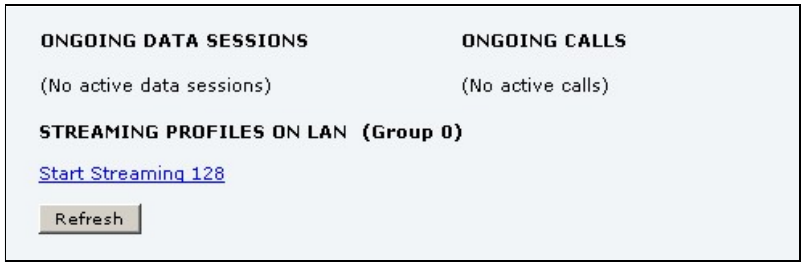
On the Dashboard you can see whether the network user group you belong to has been set up to support streaming sessions.

Note You can only start a Streaming session if the administrator has set up a Streaming profile for your user group. Contact your system administrator if you need a streaming connection.

To start or stop a streaming session do as follows:

1. Open your Internet browser and enter the IP address of the AVIATOR 200/300/350 system (default: http://192.168.0.1) to access the Dashboard of the web interface.
2. Locate **STREAMING PROFILES ON LAN**.

3. Click the link with the name of the Streaming profile that has been set up for you.



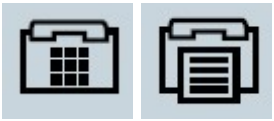
Important If you have selected and started a Streaming connection as your primary profile, the LAN or WLAN interface will be running a Streaming connection until you stop it. It is not enough to disconnect the equipment from the interface to stop the streaming connection.

Always manual activation of a Streaming connection

The streaming data connection cannot automatically be activated, you must start it manually in the web interface. This is a safety measure to prevent the system from unintended use of bandwidth.

A started Streaming session will stay active until you manually stop it by clicking on the link for the streaming class on the Dashboard.

Use a phone or fax machine



Available interfaces

Several types of voice equipment connect to the system:

Standard analog phone or G3 fax[1] **machine**: The system has two phone interfaces for connecting standard analog phones or fax machines.

ISDN phone[1] **or G4 fax machine**[1]: The system has one ISDN interface for connecting an ISDN phone or a fax machine.

SIP-enabled IP phone (smartphone): the system has an integrated SIP server for connecting a SIP-enabled IP phone. For more details on setting up and using a SIP-enabled IP phone see *Use a SIP-enabled IP handset or smartphone* on page 51.

Check the cabin installation to locate the connectors for telephones and fax machine.

For information on how to connect to the interfaces, see the AVIATOR 200/300/350 Installation and maintenance manual.

Select a call type

This is typically set up during initial configuration of the system.

The phone connection can use one of the following call types:

- **Standard Voice**: a low-tariff voice connection compressed to 4.0 kbps,
- **3.1 kHz Audio**[1]: a high quality connection used for Premium Voice, G.3 fax or analog modem,
- **UDI or RDI**[1] (only on ISDN interface): used for G4 fax or data

The default setting for an AVIATOR 200/300/350 system is standard voice.

1. AVIATOR 200 with LGA (Class 15): This service is not available.
   AVIATOR 300 with IGA (Class 7): The elevation angle must be larger than 45°.

In the web interface you can set up which type of connection to use when you make or receive a call from the Phone/Fax or ISDN interface or from an IP handset connected to the LAN interface.

Note | **Modem or fax**: When connecting a fax or a modem to the Phone/Fax interface you must use 3.1 kHz Audio.

Example: If you always have a fax connected to the same Phone/Fax interface you can set this interface to 3.1 kHz Audio only. This will mean that if an incoming Standard Voice call is received, this Phone/Fax interface will not ring. For details how to set up the interfaces see the AVIATOR 200/300/350 Installation and maintenance manual.

When connecting a G4 fax or a modem to the ISDN interface in the system you must use UDI.

To select the default outgoing call type

This is typically set up during initial configuration of the system.

You can set the default outgoing call type in the web interface. To select the default call type for outgoing calls, do as follows:

- **For ISDN**: Select the call type in the web interface under **SETTINGS > ISDN**.
  For further information, see the AVIATOR 200/300/350 Installation and maintenance manual.
- **For Phone/Fax:**. Select the call type for each port in the web interface under **SETTINGS > Phone/Fax**. For further information, see the AVIATOR 200/300/350 Installation and maintenance manual.

To override the default outgoing call type

To override the default setting for a specific outgoing call, do as follows:

- To use **Standard Voice** for the call, dial **1*** before the number.
- To use **3.1 kHz Audio** for the call, dial **2*** before the number.

Example: To call Cobham SATCOM VA in USA that has the country code 1 and the phone number 7574639557, forcing the connection to use Standard Voice, press **1* 00 1 7574639557** followed by **#** if calling from an analog or ISDN phone.

Note This will not change the default call type, only the type used for this call.

Phone numbers for incoming 3.1 kHz Audio (Premium voice) and Standard Voice

The two circuit-switched services 3.1 kHz Audio (Premium voice) and Standard Voice have separate phone numbers. This way, a person calling a phone connected to the system can select whether to use 3.1 kHz Audio (Premium voice) or Standard Voice, simply by using the dedicated mobile phone number. The phone numbers are listed in the documentation from your service provider. Even though there are two phone numbers to call the SwiftBroadband system only supports **one circuit-switched call at a time**.

Note The call type you are using must be selected in the web interface (refer to the next section).

If the mobile phone numbers have been entered in the web interface they are listed and you can look them up as follows:

1. Access the web interface from a connected computer, open a browser and type the address: **http://192.168.0.1** (default address). The **DASHBOARD** page is displayed.
2. Select **PHONE BOOK** > **Mobile numbers**.

Note There are two Voice numbers, one for 3.1 kHz Audio and one for Standard voice.

For further information, see *View and edit the mobile numbers* on page 76. If the mobile numbers are not available in the web interface, refer to the documentation from your airtime subscription.

For information on how to make a call to the system, see *To make a call to the system* on page 40.

To select the incoming call type

This is typically set-up during initial configuration of the system.

To select which call types are accepted for an incoming call do as follows:

1. Access the web interface from a connected computer by opening a browser and typing the address: **http://192.168.0.1**. The **DASHBOARD** page is displayed.
2. For **ISDN**: Select the call type under **SETTINGS > ISDN**.
   For **Phone/Fax**: Select the call type for each port under **SETTINGS > Phone/Fax**.

For further information, see the AVIATOR 200/300/350 Installation and maintenance manual.

Make or answer a phone call



Analog phone, ISDN phone or SIP-enabled IP handset

There are different methods for activating a call, depending on the type of phone:

- **Analog phone or ISDN phone**: Dial the number and press #.
- **SIP-enabled IP handset**: Dial the number and press the off-hook key.

To make a call

You have different options for making a call:

- **Short Dial**. If the number you want to call is in the phone book of the system, you can use the Short Dial number. You find this number in the web interface under **PHONE BOOK**, first column **Entry**.
  Dial **00** <**Short Dial**> followed by **#** or off-hook key.

  Example: To call entry number 4 in the phone book, dial **004** followed by **#** or off-hook key.

- **Manual Dial.** Dial **00 <country code> <phone number>** followed by **#** or off-hook key.

  Example: To call Cobham SATCOM VA in USA that has the country code 1 and the phone number 7574639557 press **00 1 7574639557** followed by **#** if calling from an analog or ISDN phone.

If there was an error establishing the connection, refer to the *Troubleshooting Guide* on page 99.

Dial timeout[1]

When you place a call, the SBU needs a timeout after the last digit dialed before the SBU can make the call. The timeout is approximately 5 seconds. You can bypass this timeout by using the "#" key.

To answer a call.

To be able to receive a call, the phone must be connected to the relevant interface of the SBU.

By default, all devices connected to the phone/fax interface, the ISDN interface or the WLAN access point will ring when one of the mobile numbers is called. Note, however, that this depends on the call type settings made during initial configuration of the system. For further details on how to set up the individual interfaces see the AVIATOR 200/300/350 Installation and maintenance manual and the documentation for your cabin installation. You can see the current setting of the interfaces in the web interface, see *Access the web interface in the AVIATOR 200/300/350 system* on page 28.

1. For 2-wire handsets and software version 4.00 or higher.

Call log

You can recall information of all incoming, outgoing and missed calls, as well as standard and streaming data sessions. This data is stored in the call log of the system. To view information on all calls do as follows:

1. Access the web interface from a connected computer, open a browser and type the address: **http://192.168.0.1** (default).
   The **DASHBOARD** page is displayed.
2. Click **CALLS**. For further information, see *Use the Call log* on page 77.

If power to the system is interrupted, the information on the currently ongoing calls (connection time) and data sessions (transferred data) cannot be saved. This means that the airtime and bandwidth usage registered in the Call log may be slightly inaccurate.

To make a call to the system

To make a call to a phone connected to the system do as follows:

Dial **+ <Mobile number>**

+ is the prefix used in front of the country code for international calls.
Mobile number: The first part of the mobile number is always 870, which is the prefix ("country code") for the SwiftBroadband system.

Example: If you are calling from the USA and the mobile number for standard voice is 870772420567 on your system, and you want to make a call to the system, dial **011 870 772420567**.

The phone numbers are listed in the documentation from your service provider. If the mobile numbers are listed in the web interface, you can look them up as follows:

1. Access the web interface from a connected computer, open a browser and type the address: **http://192.168.0.1** (default). The **DASHBOARD** page is displayed.
2. Select **PHONE BOOK > Mobile numbers**. For further information, see *View and edit the mobile numbers* on page 76.

If the mobile numbers are not available in the web interface, see the documentation from your service provider.

Note There are two Voice numbers, one for 3.1 kHz Audio and one for Standard Voice.

To receive a voice mail message

If a call to the AVIATOR 200/300/350 system is not answered the caller can leave a voice mail message with Inmarsat's voice mail service. Then an SMS is sent to the AVIATOR 200/300/350 messaging system to alert you that there is a voice message with the contents:

- Number called from
- Date and time the voice mail message has been received
- Number to call to listen to the voice mail message.

To see that a new SMS has arrived you open the web interface. For further details see *SMS service* on page 53 and *View the Voice mail number* on page 79.

On first-time use the voice mail box at Inmarsat's voice mail service must be configured, follow the instructions given when you call the number to listen to a voice mail message.

To make local phone calls

You can make local calls between various phones connected to the system. Local phone numbers always start with 0. For an overview of the numbers, see *Special-purpose and local numbers* on page 42.

To make a local call do as follows:

Dial **<local number>** followed by **#** or off-hook key.

Local numbers of analog phones, ISDN phones and IP handsets are assigned according to the table in *Special-purpose and local numbers* on page 42. Note that if you are using local numbers for ISDN and SIP enabled IP devices, the numbers must be programmed in the devices. For further information refer to the documentation for your device.

Special-purpose and local numbers

The following list shows the allocated special-purpose numbers.

Number	Function
0 * followed by **#** or off-hook key	Redial last called number on this interface.
00 * followed by **#** or off-hook key	Redial last answered call on this interface. Note: If the last answered number is an unlisted number, you will not be allowed to dial back.
00 followed by one of the numbers **1**-**199** and **#** or off-hook key	Short dial phone numbers in phone book.
0300 followed by **#** or off-hook key	Local call broadcast to both analog phones.
0 followed by one of the numbers **301**-**302** and **#** or off-hook key	Local call to analog phone.
0400 followed by **#** or off-hook key	Local call broadcast to all ISDN phones.[a]
0 followed by one of the numbers **401**-**402** and **#** or off-hook key	Local call to ISDN phone.[a]
0500 followed by **#** or off-hook key	Local call broadcast to all IP handsets.[a]
0 followed by one of the numbers **501**-**516** and **#** or off-hook key	Local call to SIP-enabled IP handset.[a]
0900 followed by **#** or off-hook key	Local call broadcast to all handsets.

a. Note that the local number must be programmed in the ISDN and SIP-enabled IP phone.

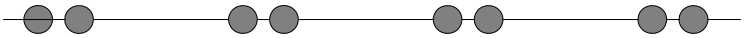
Dialing prefixes

Apart from the numbers above, you can use the following dialing prefixes before the number:

Prefix	Function
1*	Forces the connection to use **Standard Voice**.
2*	Forces the connection to use **3.1 kHz Audio**.
#31#	Hides the caller's phone number to the recipient.
***31#**	Shows the caller's phone number to the recipient where it would otherwise be hidden, e.g. because the number is an ex-directory number.
R	The following key-presses should activate a supplementary services function supported by the system. These function are described in the following sections.

To handle waiting calls

During a local or external call, if a second party attempts to make contact with you, you may hear a Call Waiting indication. This indication is two beeps and a pause of 3 seconds, then two beeps again etc. If no action is taken, the waiting call is released after a time-out period.



In the web interface you can enable or disable the call waiting indication. For further information how to set-up the call waiting function see the AVIATOR 200/300/350 Installation and maintenance manual.

How to handle waiting calls depends on the type of phone. For analog 2-wire phones with an R key follow the instructions in the table below.

If you want to:	Do as follows:
Clear the current call, and accept the waiting call.	Press **R 1 #**, within the time-out period.
Hold the current call, and accept the waiting call.	Press **R 2 #**, within the time-out period.
Ignore the waiting call.	Take no action.
Reject the waiting call.	Press **R 0 #**, within the time-out period.

For information how to handle waiting calls using the AVIATOR Wireless Handset see the user manual of the AVIATOR Wireless Handset.

Note The SwiftBroadband system only supports one circuit-switched call at a time per AVIATOR 200/300/350 system.

To hold a call

During a local or external call, you may place the initial call on hold while another call is made.

How to put a call on hold depends on the type of phone. For analog 2-wire phones with an R key follow the instructions in the table below.

If you want to:	Do as follows:
Place a call on hold.	Press **R 2 #**.
Place the existing call on hold and establish a new call.	Press **R** and dial the second phone number followed by **#**.
Shuttle between the two calls.	Press **R 2 #** (irrespective of whether the second call was acquired using Call Hold or acceptance of Call Waiting.)
Clear the held call, if no waiting call exists.	Press **R 0 #**.
Clear an active call and return to the held call.	Press **R 1 #**. Note that this is only possible if no waiting call exists.

For information how to hold a call using the AVIATOR Wireless Handset see the user manual of the AVIATOR Wireless Handset.

Note The SwiftBroadband system only supports one circuit-switched call at a time per AVIATOR 200/300/350 system.

To transfer a call

When you receive a call, you can transfer this call to another phone connected to the system.

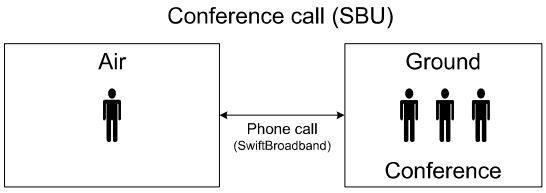
How to transfer the incoming call to another phone or headset depends on the type of phone. For analog 2-wire phones with an R key follow the instructions listed below.

1. Press **R 4 * <local number> #**.
   The phone with the local number you dialed starts to ring.
2. You now have two options.
   - Hang up. The phone or headset you transferred the call to continues to ring. When the call is answered, a connection is established between the initial caller and the new recipient.
   - Do not hang up. When the new recipient answers, you can have a conversation before hanging up. When you hang up, the call is handed over to the initial caller.

For information how to transfer a call using the AVIATOR Wireless Handset see the user manual of the AVIATOR Wireless Handset.

Note The SwiftBroadband system only supports one circuit-switched call at a time per AVIATOR 200/300/350 system.

To make a multi-party call



How to make a multi-party call depends on the type of phone. For analog 2-wire phones with an R key follow the instructions listed below.

When you have an already established call you can initiate a conference call by using the following options:

If you want to:	Do as follows:
Add an incoming call announced by the Call Waiting indication.	Press **R 2 #**, the already established call is put on hold and the incoming call is connected for you to have an initial conversation with the caller before the call is added to the conference call. Then press **R 3 #**, you are returned to the held calls and the incoming call is joined in the conference call.
Initiate a new call and have it joined to the already existing call.	Press **R <phone number> #**, to initiate a new call and have an initial conversation before the call is added to the conference call. Then press **R 3 #**, you are returned to the held calls and the initiated call is joined in the conference call.
Clear all calls.	Press **R 1 #** or alternatively just hang-up.

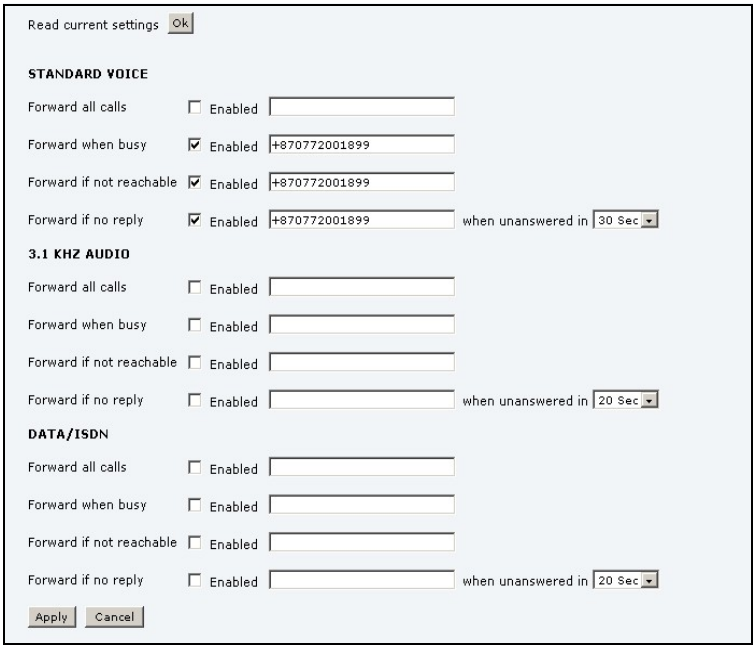
For information how to make a multi-party call using the AVIATOR Wireless Handset see the user manual of the AVIATOR Wireless Handset.

To forward a call

You can set up the system to automatically forward incoming calls to another phone number. This information is saved in the SwiftBroadband network so it is available when the call cannot be put through and must be forwarded. This service is usually setup by the airtime provider.

To forward incoming calls do as follows:

1. Select **SETTINGS > Common > Call forward** from the left navigation pane.



2. Click **OK** next to **Read current settings** to display the phone numbers for call forwarding for the subscription or what you have entered. These numbers are operator controlled and come with your airtime subscription (default). A message saying **Operation in progress, please wait.** is displayed.

   Note Allow sufficient time for the system to read the current settings over the satellite connection.

3. For each call type, select **Enabled** next to the situation(s) in which you want to forward incoming calls.
4. Next to the enabled items, you can type in a phone number to forward the call to. If you have selected **Forward if no reply**, select from the drop-down list the period of time the system should wait before forwarding the call.
5. Click **Apply**.

Send or receive a fax message



Note | Only AVIATOR 300 and AVIATOR 350.

Delay before time-out

When sending or receiving fax messages over a satellite connection, the fax units at each end of the transmission line must be capable of handling longer delays without timing out. Some fax machines have an Overseas mode, which enables the unit to handle the long delays. Make sure that your fax machine is set to allow long delays before time-out.

To send a fax message from the system (air to ground)

Note | In case the default setting in the web interface is not 3.1 kHz Audio, dial 2 * before the number, to force the connection to use 3.1 kHz Audio for fax use. For further information, see *To override the default outgoing call type* on page 36.

The fax machine must be connected to the Phone/Fax interface or the ISDN interface of the system. See the AVIATOR 200/300/350 Installation and maintenance manual for further details.

3.1 kHz Audio must be used for an analog fax machine. See *To select the default outgoing call type* on page 36.

UDI must be used for an ISDN G4 fax machine, refer to the AVIATOR 200/300/350 Installation and maintenance manual for details how to configure the ISDN interface.

To send a fax from a fax machine connected to the system, dial
00 <country code> <phone number> #

Example: To send a fax to Cobham SATCOM VA in the USA (the number +1 757 463 9581), dial **00 1 757 463 9581 #**

To send a fax message to the system (ground to air)

To send a fax message to the system, dial

+ <Mobile number> #

- **+** is the prefix used in front of the country code for international calls.
- **Mobile number**. The first part of the mobile number is always 870, which is the "country code" for the SwiftBroadband system.

  To send a fax to a G3 fax use the 3.1 kHz Audio mobile number

  To send a fax to an ISDN G4 fax use the UDI number.

  The numbers are listed in the documentation from your service provider. If the mobile numbers are listed in the web interface, you can look them up as follows:

  Connect a computer, access the web interface and select **PHONE BOOK > Mobile numbers**. For further information, see *View and edit the mobile numbers* on page 76.

  Note There are four mobile numbers, one for 3.1 kHz Audio, one for Standard voice, one for UDI and one for RDI.

To receive a fax message

An analog fax machine connected to the system can only receive a fax with 3.1 kHz Audio. Refer to *To select the incoming call type* on page 38.

An ISDN G4 fax machine connected to the AVIATOR 200/300/350 system can only receive a fax with a call type UDI.

Use a SIP-enabled IP handset or smartphone

SIP-enabled wireless IP handset or smartphone

The AVIATOR 200/300/350 system has in integrated SIP server. If your mobile phone or smartphone is a SIP enabled IP handset, it has a SIP client. Then you can set it up and use it to make phone calls or use other data services using the SwiftBroadband service.

Note Check whether your mobile phone or PDA has a wireless interface and an integrated SIP client.

Once set-up, you can use the SIP-enabled IP handset as a local phone during flight. When calling you use the SwiftBroadband service and the SwiftBroadband mobile numbers. The call costs will be charged to the SwiftBroadband subscriber. The call receiver will be called up from the system's 870 number (Area code for Inmarsat satcom services).

When your device is connected to the SIP server of the AVIATOR 200/300/350 system you cannot be called at your own mobile number and you cannot send or receive SMS messages.

Where to get a SIP client application

If your smartphone does not have a SIP client, you can download one e.g. from one of the links below:

- Apple iPhone App store (www.apple.com/iphone/from-the-app-store/)
- Android Market (www.androidauthority.com)

Note The SIP client is a third party application. Cobham SATCOM does not offer technical support for it.

Set up a SIP-enabled wireless IP handset

To set up a SIP enabled IP handset, do as follows:

1. Connect to the Wireless access point of the AVIATOR system.
   Check that the WLAN icon in the handset display indicates that the WLAN connection has been established. If your WLAN is encrypted check with your system administrator how to proceed to access the encrypted WLAN network.
2. Connect to the SIP server of the AVIATOR 200/300/350 system. See the user manual of your IP handset for guidelines how to establish a connection to a SIP server. For this you may need to enter the following details into the device:
   - SIP server name, port and address, default: 192.168.0.1
   - User name
   - Password
   - Codec priority
   - Realm
   - Audio configuration, Silence support

User name: When connecting to a SwiftBroadband Unit, the user name should be a local number, i.e. 05xx. This must be configured in the built-in web interface under **SETTINGS > IP handsets**.

Password: When connecting to a SwiftBroadband Unit, the password is the local number for this phone. It is a number in the range of 0501 to 0516 which is not yet assigned to other IP phones. The password must match the IP Handset password entered in the SwiftBroadband Unit.

Codec priority: Select the codec type that should have the highest priority. You may select G.711 A-LAW.

Realm: If asked for Realm, enter the serial number of the AVIATOR 200/300/350 SBU.

Audio configuration, **Silence support enable**: Set to **no**. The phone should not stop sending data packets even though there is silence and no one speaks.

Having established this connection you can make calls with SIP-enabled IP handset and it can be called to, also as a local phone of the AVIATOR 200/300/350system.

Note All charges for calls and data sessions are billed to the AVIATOR 200/300/350 system.

SMS service



Introduction

The integrated SMS service lets you send and receive short text messages from and to the AVIATOR 200/300/350 system. Theses messages are public and stored in the system, they can be viewed by all system users. The SMS service is used to alert you that a voice mail has been received.

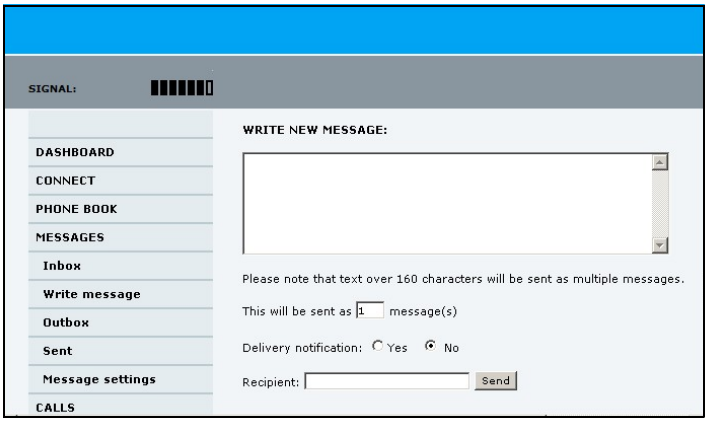
The AVIATOR 200/300/350 message service does not manage personal SMS messages to and from personal IP devices.

To send an SMS message

You can send and receive SMS messages using the AVIATOR 200/300/350 system. To do this you must connect a computer to the system using a LAN or WLAN connection and access the web interface.

To send an SMS message **from** the system, do as follows:

1. Access the web interface from a connected computer, open a browser and type the address: **http://192.168.0.1** (default). The **DASHBOARD** page is displayed.
2. Click **MESSAGES** from the left navigation pane.
   This page contains new incoming messages. On this page you can archive the messages and move them to the Inbox or you can delete a message.
3. In the left navigation pane, click **Write message**.



4. Type in the message in the **Write new message** field.

   If the message text is too long for one SMS, the message is sent as two or more SMS messages. The field below the message field shows the number of SMS messages used to send the message.

5. Type in the phone number in the **Recipient** field.

   Remember **00** or **+** and **country code** (e.g. **00 45** for Denmark or **00 1** for USA).

6. Select whether or not you want **Delivery notification** for this SMS message.

   If you click Yes, the Status column in the Sent folder will show the status of your message when it has been sent.

   You can set up delivery notification generally for all SMS messages. This setting is used by default when you send a message. For further information, see *Configure message settings* on page 59.

7. Click **Send**.

   The message is now sent and moved to the Sent folder.

Important If the system is not online when you attempt to send a message, the message is moved to the Outbox instead of the Sent folder. Messages in the Outbox are **not** automatically sent when the system goes online. For further information on the Outbox, see the next section, *Options for messages in the Outbox*. To make sure a message has been sent, check that it has been moved to the Sent folder.

One SMS messages can have 160 characters. However, the system will allow you to input a longer message, which will then be divided up and sent as multiple SMS text messages. Have this in mind when you write messages. The more messages you have to send, the more transferred data you are charged for.

Options for messages in the Outbox

Messages in the Outbox are messages that have not been sent, e.g. because the system was not online when you attempted to send the messages.

To access the Outbox, click **MESSAGES** > **Outbox** from the navigation pane.

You have the following options for messages in the Outbox:

- When the system is online, click **Resend** next to the message you want to send. When the **Write message** page opens, click **Send**.

  The system now attempts to send the message again. To make sure the message has been sent, look in the Sent folder.

  Note The original message remains in the Outbox. When you have succeeded in sending the message you may want to delete it from the Outbox.

- Click **Delete** next to a message to delete it.
- Click **Delete all messages in Outbox** to delete all the messages.

Options for messages in the Sent folder

The Sent folder contains SMS messages that have been sent.

To access the Sent folder, select **MESSAGES** > **Sent** from the navigation pane.

The Status column shows the status of each message, if you have selected Delivery notification when sending the message.

From the Sent folder you have the following options:

- Click **Resend** next to a message you want to send again.
  When the Write message page opens, click **Send**.
  The system now attempts to send the message again. To make sure the message has been sent, look in the Sent folder. There should now be two copies of the sent message.
- Click **Forward** next to a message you want to forward.
  Type in the phone number of the new recipient and click **Send**.
  The system now attempts to send the message to the new recipient. To make sure the message has been sent, look in the Sent folder.
- Click **Delete** next to a message to delete it.
- Click **Delete all sent messages** to delete all the messages.

Send an SMS message to the system

You can send an SMS message to the system e.g. from a mobile phone, using one of the system's mobile numbers for voice. Dial

+ <Mobile number>

The first part of the mobile number is always 870, which is the "country code" for the SwiftBroadband system. If the mobile numbers are listed in the web interface, you can look them up as follows:

Select **PHONE BOOK > Mobile numbers**. If the mobile numbers are not listed in the web interface, refer to your service provider.

Note There are two Voice numbers, one for 3.1 kHz Audio and one for Standard Voice.

Receive a message

If a message has arrived, the icon bar at the top of the web interface shows an unopened envelope. Click the envelope to see the new message(s).



Otherwise, to see new messages click **MESSAGES** from the left navigation pane. The page shows new incoming messages.

The message icon disappears when all the messages on this page have been archived or deleted.

Note The system does not accept more than 100 incoming messages (including read and unread messages). If you have received 100 messages, you have to delete some of them in order to free space for new messages. Otherwise, the new messages are rejected.

If the message is not an SMS message but information of voice mail, call your voice mail service number to hear the voice mail. The voice mail number is displayed together with the message.

When using the voice mail service for the first time you must configure your voice mailbox with your welcome greetings. Follow the instructions given by the voice mail system.

To find your voice mail number, select **MESSAGES** > **Message settings** from the left navigation pane and locate the **Voice mail number**.

Note that the voice mail number is only shown if it is available on the SIM card. Otherwise, refer to the information from your service provider.

Options for new SMS messages

To see new messages, click **MESSAGES** from the left navigation pane.

Besides viewing the new messages, you have a number of options for what to do with each message:

- Click **Archive** to move it to your Inbox containing read messages.
- Click **Reply** to reply to a message.
  Then type in your reply and click **Send**.
  For information on how to include the original message in your reply, see *To set up the default message options* on page 59.
- Click **Forward** to forward a message to someone.
  Then type in the phone number in the **Recipient** field and click **Send**.
- If you want to move all the new messages, click **Move all new messages to Inbox**.

Note New messages cannot be deleted until they have been archived and moved to the Inbox.

Options for SMS messages in the Inbox

The messages in the Inbox are the incoming messages that have been archives from the list of new messages.

From the Inbox, you have the following options:

- Click **Reply** to reply to a message.
  Then type in your reply and click **Send**.
  For information on how to include the original message in your reply, see *To set up the default message options* on page 59.
- Click **Forward** to forward a message to someone.
  Then type in the phone number in the **Recipient** field and click **Send**.
- Click **Delete** to delete the message.
- Click **Delete all messages in Inbox** to delete all read messages in the Inbox.

Configure message settings

To set up the default message options

You can set up general options for outgoing messages. These settings apply by default to all outgoing messages. Note, however, that you can change the Delivery notification setting for an individual message. For further information, see *To send an SMS message* on page 53.

To set-up the default message options do as follows:

1. Select **MESSAGES** > **Message settings** from the left navigation pane.



2. If you want to include the original message when you reply, select **Yes** next to **Include message in reply**.
3. Select whether or not you want **Delivery notification** for SMS messages.
   If you click Yes, the Status column in the Sent folder will show the status of your message when it has been sent.
4. Click **Apply**.

To view or change SMS service center number

The SMS service center number identifies the SMS service center used when sending and receiving SMS messages. The SMS service center is used when you send a text message (SMS message) to another user. The message is stored in the SMS service center which delivers it to the destination user when they are available.

The SMS service center number is stored on the SIM card.

- To see the SMS service center number, select **MESSAGES** > **Message settings** from the left navigation pane.
- To change the number, click **Edit** next to **SMS service center**, change the number and click **Save**. Then click **Apply** to apply all changes in the page.

The SMS service center number is provided from your service provider.

SB-Safety Voice

Introduction

This section describes how to use the SB-Safety Voice service. The SB-Safety Voice Service is an optional service, it is included in software version 4.00 and higher. The handling of calls with priority levels, preemption, visual and audible annunciation using the SB-Safety Voice service is described. The SB-Safety Voice service includes:

- Selecting the priority level of the call before placing an outgoing call
- Using external pre-programmed speed-dial numbers with priority level
- Handling the priority level for an active call
- Handling the priority level for an incoming call
- Annunciate the call status and SB-Safety Voice service availability

You can use the SB-Safety Voice service with a dialer or a common 2-wire headset or handset with optional integrated dialer. An annunciator panel shows the availability of SB-Safety Voice, incoming call, and the priority of incoming and active calls. The following table shows the priority levels.

Priority Level	Application Category	SATVOICE Call Examples
1 (highest) Safety of Flight	Distress and Urgency	Inflight Emergency, Rapid Emergency Descent, Urgent Sidestep for Weather
2 Operational High (second highest) Safety of Flight	Flight Safety	Altitude Request, ATC Clearance/Instruction
3 Operational Low (third highest) Safety of Flight	Regularity of Flight, Meteorological Administrative	Air Traffic Information Service, AOC, Redispatch, Maintenance

Table 2: Priorities for SATVOICE calls (SB-Safety Voice)[a]

a. Advisory Circular AC No.20-150B of U.S. Department of Transportation Federal Aviation Administration

Make and answer an SB-Safety Voice call from the cockpit

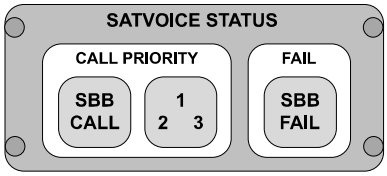
You can make and answer SB-Safety Voice calls from the cockpit.

Incoming call

Incoming calls are announced with a visible indicator in an annunciator panel and an audible indicator. The annunciator panel has typically three functions:

- Showing fail on the SB-Safety Voice service
- Showing an incoming call
- Showing the priority level of the active and incoming call

The following figure shows an example of an annunciator panel.



The SBU indicates the incoming call by lighting the SBB annunciator and flashing with the priority indicator for indicating the priority level of the incoming call (1, 2 or 3).

If the aircraft is in a critical flight phase e.g. takeoff and landing, there are no audible alerts for incoming calls. Then the SBB indication signal will not indicate an incoming call. The priority level indicators will still flash. If a 2-wire headset or handset with built-in ringer is used, the ring signal will also be inhibited. In both cases you can answer the call as normal.

Dialing

Depending on your system setup you may be able to dial manually or you can use speed dialing from an embedded directory in the dialer. Inmarsat short codes can also be used.

Note If you want to make a call with a short code from Inmarsat (6 digits) or your service provider (5 or less digits), do not use any call prefix or country code.

Placing a call, default priority

All calls are per default defined as priority level 2 calls. The phone numbers must start with the international call prefix "00" followed by the country code e.g. "870" for Inmarsat satellite phones. The priority level is shown on the annunciator panel.

Placing a call with selected priority

If you want to make a call with a selected priority level, you must change the international call prefix to the phone number.

When dialing numbers the international call prefix can be changed to select the priority level: "01" for level 1, "02" for level 2 and "03 for level 3. The phone numbers will look like this:

- Priority level 1: 01 45 XX XX XX XX
- Priority level 2: 02 45 XX XX XX XX (or 00 45 XX XX XX XX)
- Priority level 3: 03 45 XX XX XX XX

(45 is an example of a country code, Denmark in this example)

No matter which priority level the outgoing call has, the phone number transferred to the built-in telephone exchange is converted to the standard phone number using 00 as international call prefix. You can see the priority level of the call in the annunciator panel.

Placing a call, dial timeout

When you place a call, the SBU needs a timeout after the last digit dialed before the SBU can make the call. The timeout is approximately 5 seconds. You can bypass this timeout by using the "#" key.

Preemption

If an incoming call of a higher priority than the ongoing call, for example ongoing call priority 2 and incoming call priority 1, occurs, the active call is terminated immediately. If the active call is terminated, a preemption tone for 3 seconds announces the incoming call in the headset or handset. At the same time the priority level of the new call flashes on the annunciator panel and then goes solid when the new call is established. The new incoming call

is automatically transferred to the active phone line. If an incoming call is refused by its priority, the caller hears a busy tone.

Cabin calls

The cabin user interface has an Ethernet connection for Internet services and VoIP service via the built-in telephone exchange in the SBU. Incoming cabin calls are routed to the VoIP headset or handset, if present. If no HS is present for accepting incoming cabin calls, the call is rejected with a busy tone. Outgoing calls from the cabin i.e. from the VoIP headset or handset are placed as a priority level 4 call. A cabin call is preempted by any call to or from the cockpit.

Advanced use

In this chapter

In this chapter you can read about:

- *Get to know the web interface*
- *Use the phone book*
- *Use the Call log*
- *Start or stop any data session*
- *Preferred satellite*
- *Call log handling*
- *Set data limits*
- *Set up the local exchange function*
- *Remote management*
- *Remote activation with SMS*
- *Restricted dialing*

Get to know the web interface

The web interface is built into the system and used for operating, setting up and configuring the system.

You can access the web interface from a computer with a standard Internet browser.



To connect to the web interface

To access the web interface, an Internet browser must be installed on the computer. Connect your computer to the AVIATOR 200/300/350 system, using one of the LAN interfaces (up to 6) installed in the aircraft cabin or use the Wireless connection, if available.

Proxy server settings

If you are connecting your computer using a LAN or WLAN interface, the **Proxy server** settings in your browser must be disabled before accessing the web interface. Most browsers support disabling of the Proxy server settings for one specific IP address, so you can disable Proxy server settings for the web interface only, if you wish. Consult your browser help for information.

To disable the use of a Proxy server completely, do as follows:

Note The following description is for **Microsoft Internet Explorer**. If you are using a different browser, the procedure may be different.

1. In Microsoft Internet Explorer, select **Tools > Internet Options > Connections > LAN Settings**.



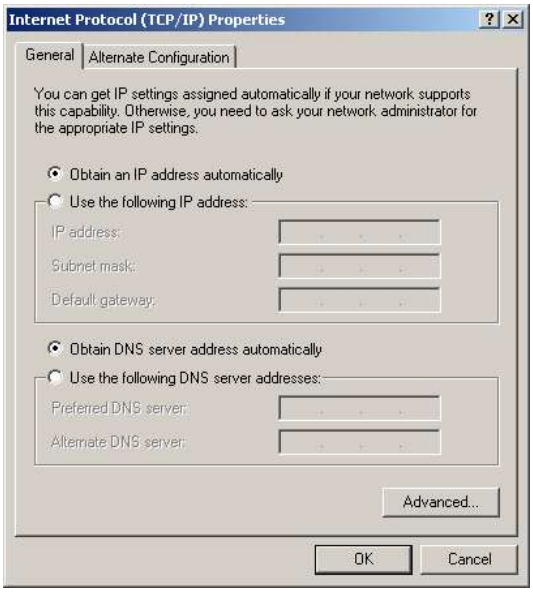
2. Clear the box labeled **Use a proxy server for your LAN**.
3. Click **OK**.

When the proxy server settings are disabled, close and restart your browser. You may need to change this setting back on return to your Internet connection.

IP address and DNS server address setup

To check whether automatic IP address and DNS server address is obtained automatically for your computer, do as follows (example for Windows XP):

1. Go to **Start** > **Settings** > **Control Panel** > **Network Connections**.
2. Right-click on the **LAN connection** you want to use.
3. Select **Properties**, highlight **Internet Protocol (TCP/IP)**.
4. Click **Properties**.
5. Make sure that the following is selected:
   - Obtain an IP address automatically
   - Obtain DNS server address automatically



Allocating IP addresses and DNS server lookups are handled by the system.

Access and navigate the web interface

To access the web interface

To access the web interface, do as follows:

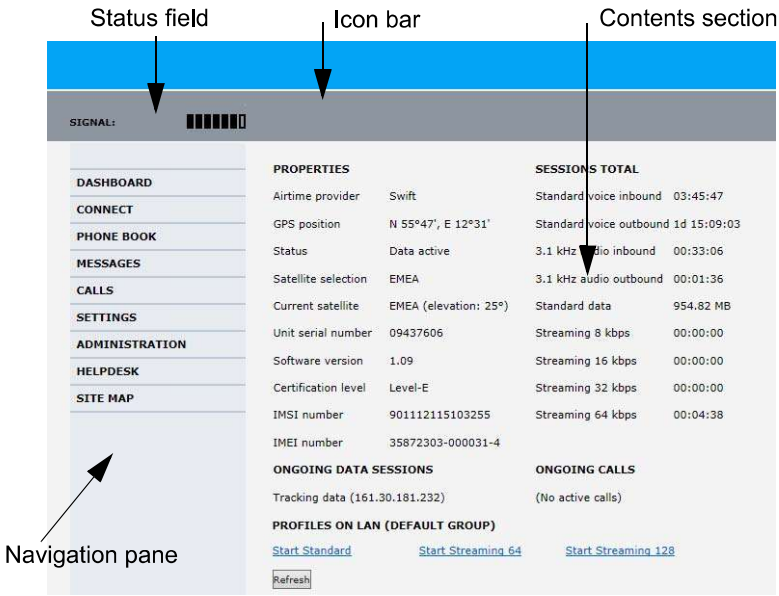
1. Connect your computer to the system.
2. Make sure that the AVIATOR 200/300/350 system is fully operational in the aircraft.

Open your Internet browser and enter the IP address of the system. This is the internal IP address. The default IP address is **192.168.0.1**.

Note If the IP address has been changed and you do not have the new address, contact your system administrator and request the new IP address.

Overview of the web interface

The web interface consists of the following sections (example: AVIATOR 350):



- The **navigation pane** holds the main menu. Clicking an item in the menu opens a submenu in the navigation pane or a new page in the contents section.
- The **status field** shows the signal strength.
- The **icon bar** shows icons for new SMS messages and for active events, when relevant. For explanations of the icons, see the next section, *Icons in the icon bar*.
- The **contents section** shows the page selected in the navigation pane. This section is used for viewing or changing settings, or for performing actions.

Icons in the icon bar

The following icons may appear in the icon bar in the web interface:

Icon	Explanation
	A new SMS message, or information of Voice mail, has arrived. Click the icon to see new messages or information of Voice mail. For further information, see *Receive a message* on page 57.
	An event is active. Click the icon to see a list of active events. For explanations of the event messages, see the AVIATOR 200/300/350 Installation and maintenance manual. Note that this icon will remain in the icon bar as long as the event is still active.

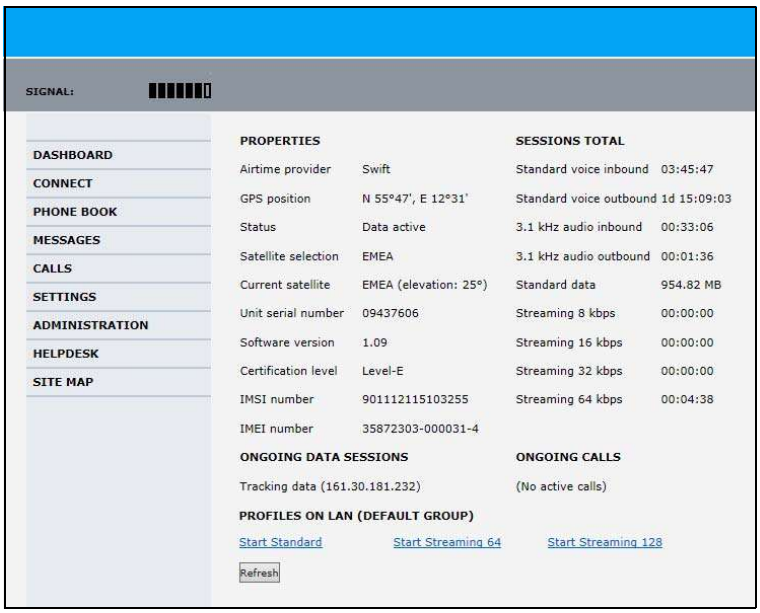
To navigate the web interface

- **To expand a menu**, click the menu in the navigation pane.
- **To access status and settings**, click the relevant subject in the navigation pane or click the relevant icon in the icon bar. The status or settings are displayed in the contents section.
- **To get an overview over the submenus available use the site map**, click **SITE MAP** in the navigation pane. Click on items in the site map to go directly to the relevant location.

Note Some parts of the web interface may be greyed out if the user permissions are limited. For information on how to set up user permissions, see the AVIATOR 200/300/350 Installation and maintenance manual.

Use the Dashboard

The Dashboard is the first screen that is displayed when you enter the IP address of the web interface of the AVIATOR 200/300/350 system. The Dashboard is used for control and inspection of ongoing communication and for viewing properties and status of the system and antenna.



Properties

The **PROPERTIES** section of the **DASHBOARD** shows the following information:

- **Airtime provider**. The name of your Airtime Provider.
- **GPS position**. The GPS position of your AVIATOR 200/300/350 system.

  Note In some cases, the BGAN network does not allow the position to be displayed to the user. If this is the case, the display may just show **GPS acquired**. This means that the GPS position is received, but the user is not allowed to see it.

  This also applies if the AVIATOR 200/300/350 is not yet registered on the SwiftBroadband network, but the GPS position is received.

- **Status**. The status of the system and antenna.

  Examples of status information are: Scanning, Ready and Data active.
- **Satellite selection**. The satellite selected for logon. For further information, see *Select the preferred satellite* on page 81.
- **Current satellite**. The current satellite and elevation angle.
- **Unit serial number**. The serial number of the SwiftBroadband Unit of the AVIATOR 200/300/350 system.
- **Software version**. The version of the software embedded in the SwiftBroadband Unit.
- **Certification level**. This field shows whether the system is Level-D or Level-E certified.
- **IMSI number**. The IMSI number (International Mobile Subscriber Identity) of the system. It is a unique number that is stored on the SIM card inside the system and sent to the network.
- **IMEI number**. The IMEI number (International Mobile Equipment Identity) of the system. This is a unique number that identifies your system.

To view information on calls and data sessions

The following sections in the **Dashboard** show information on calls and data sessions.

- **ONGOING DATA SESSIONS** is a list of data profiles that are currently active, including the external IP address that is assigned to each profile. The external IP address is assigned by the SwiftBroadband network for each connection.
- **SESSIONS TOTAL** lists the totals for each connection type. The list shows the time connected for voice and Streaming data, and MB transferred for Standard data.
- **ONGOING CALLS** is a list of calls that are currently active. The list shows the call type and the time connected for each call.

The counters show totals for connections since the counters were last cleared. For information on how to clear the counters, see *Call log handling* on page 82.

Use the phone book

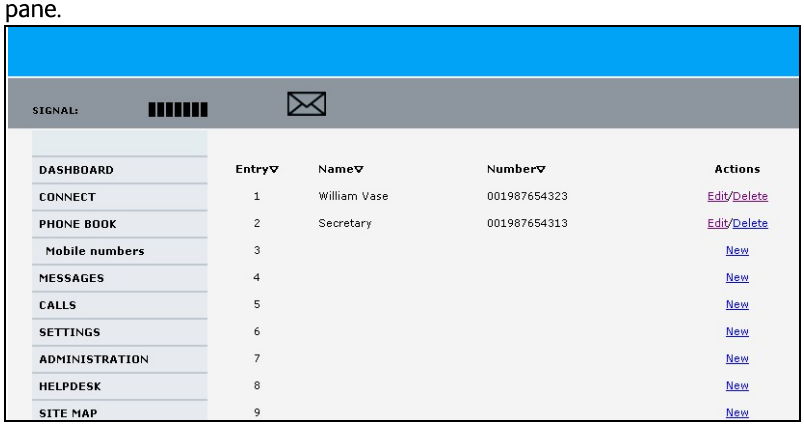
The phone book is stored in the Configuration module of the AVIATOR 200/300/350 system. In the phone book you can:

- Look up phone numbers.
- Look up short-dial numbers for easy dialing from a handset.
- Modify or delete existing names and phone numbers, or add new names and phone numbers.

The numbers of the phones available on the aircraft and the mobile number of the system might already be entered when the system was initially configured.

Access the phone book

To access the phone book, select **PHONE BOOK** from the left navigation pane.



The phone book shows all entries with entry number, name and phone number. Empty placeholders are also included.

To sort the phone book, click the title of the column you wish to sort by. For example, to sort by the names in the phone book alphabetically, click on **Name** in the top row of the phone book.

The phone book holds 199 entries divided into sub pages. To select the sub pages you want, click the relevant link at the bottom of the page.

Short dial

The entry number in the phone book is the Short dial number. When making a call from the system you can use this number instead of dialing the entire phone number.

For Short dial numbers 1-99: Dial **00 <short dial>** followed by **#** or off-hook key.

For Short dial numbers 100-199: Dial **0 <short dial>** followed by **#** or off-hook key. **The number must not exceed 4 digits!**

Example: To call the third entry in the phone book from an analog phone, take the phone off hook and dial **003 #**.

Example: To call the 102nd entry in the phone book from an analog phone, take the phone off hook and dial **0102 #**.

Add, modify and delete phone book entries

To add a new entry, do as follows:

1. In the phone book, locate the empty entry number where you want to add the new phone number and click **New**.
2. Type in the name and phone number of the new entry and click **Save entry**.
   The new name and number are now listed at the specified entry number in the phone book.

To modify an entry, do as follows:

1. In the phone book, click **Edit** next to the entry you want to modify.
2. Modify the name or number as wanted and click **Save entry**.
   The name and/or number in the selected entry is now replaced with the new information.

To delete entries, do as follows:

To delete one entry, click **Delete** next to the entry you want to delete.

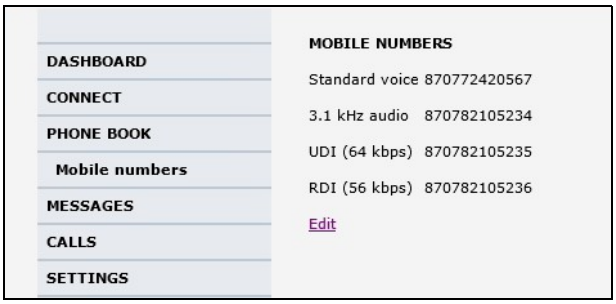
To delete all the entries in the phone book, click **Delete all entries in phone book** at the bottom of the **PHONE BOOK** page.

View and edit the mobile numbers

To view the mobile numbers and additional numbers[1]

To view the mobile numbers of the AVIATOR 200/300/350 system, select **PHONE BOOK > Mobile numbers** from the left navigation pane. The mobile numbers are the phone numbers to use when making a call to the AVIATOR 200/300/350 system.

Note These numbers are not listed at delivery. They may have been entered during initial configuration of the system or can be entered at a later stage. The numbers are stated in the documentation from the service and airtime provider.



The example above is for a system without Multi-voice.

To enter or edit the mobile numbers

To enter or edit the mobile numbers, click **Edit** at the bottom of the page, type in the numbers received from your service and airtime provider and click **OK**.

If Multi-voice is part of your system, the additional numbers from your airtime provider can be entered in the web interface.

1. Available for systems with Multi-Voice and subscriptions with additional numbers.

Use the Call log

The call log holds information on all calls and data sessions since the call log was last cleared.

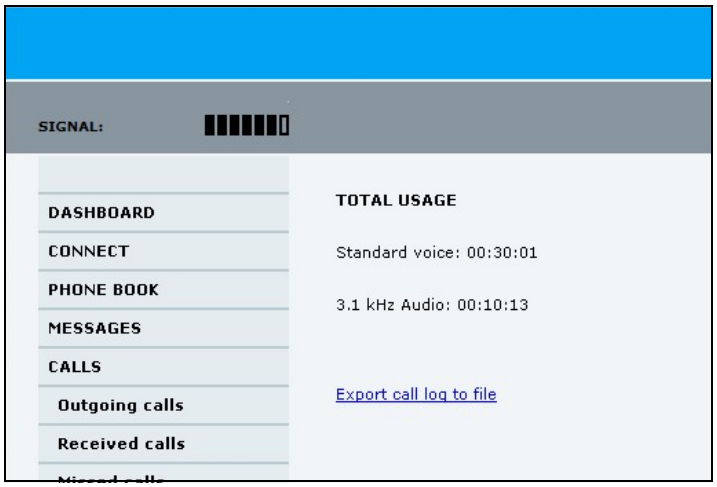
Note If power to the system is interrupted, the information on the currently ongoing calls (connection time) and data sessions (transferred data) cannot be saved. This could mean that the airtime and bandwidth usage in the Call log will be slightly inaccurate.

Information on total usage

To enter the CALLS page select **CALLS** from the left navigation pane. The CALLS page contains information on usage for circuit switched connections.

The listed information includes:

- Time connected using Standard Voice
- Time connected using 3.1 kHz Audio.



Export the call log

You can export the call log file for archiving, surveillance or other tracking purposes. To export the entire call log to a file, do as follows (example for MS Internet Explorer):

1. In the **CALLS** page, click the link **Export call log to file**. The log opens in the current browser window.
2. In the browser, click **File**, **Save as**.
3. Browse to the location where you want to save the log. The log is saved as a.txt file.
4. Click **OK**.
5. Click **Back** to return to the web interface.

If there are more than 100 calls in the total list, the oldest calls are automatically removed to make room for new calls.

View the lists of calls and data sessions

To see information on outgoing, received or missed calls or data sessions, select one of the following submenus from the left navigation pane in the **CALLS** page:

- **Outgoing calls** shows the start time, receiving end phone number, duration, type (Standard or 3.1 kHz Audio) and estimated charge of each outgoing call.
- **Received calls** shows the start time, calling phone number, duration and type (Standard or 3.1 kHz Audio) of each incoming call.
- **Missed calls** shows the start time, calling phone number and type (Standard or 3.1 kHz Audio) of each incoming call that was not received.
- **Standard data sessions** shows the start time, bytes in, bytes out and estimated charge of each Standard IP session.
- **Streaming data sessions** shows the start time, duration, type (Streaming 8, 16, 32, 64, 128 kbps or X-Stream) and estimated charge of each Streaming IP session.

Date and time is the international UTC time, received from the satellite.

For information on the available types of service, see the AVIATOR 200/300/350 User Manual.

Note The estimated charge is based on your entries under ADMINISTRATION > Call charges. Thrane & Thrane A/S does not take responsibility for the correctness of the estimated charges. This calculation is only a rough estimate of the charge, based on the tariff entered by the user. Also, the airtime provider may have different methods of calculating the charge.

You can sort each of the lists by clicking the title of the column you wish to sort by.

If a list covers more than one page, you can click the relevant link at the bottom of the page, to go to another page.

View the Voice mail number

The Voice mail number is the number you call to hear your incoming voice mail.

Note The Voice mail number is only listed if it is available on the SIM card. Otherwise, refer to the information included with your airtime subscription.

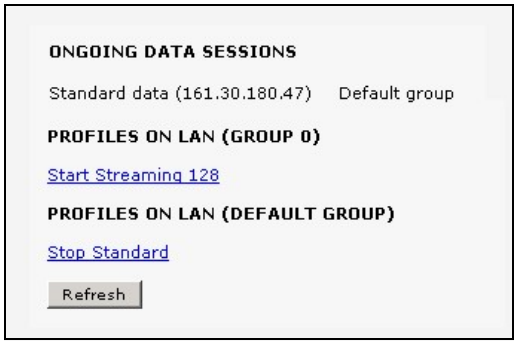
To see the Voice mail number, select **MESSAGES** > **Message settings** from the left navigation pane. The **Voice mail number** field shows the Voice mail number.

Start or stop any data session

If necessary, you can start and stop any data session for all network user groups connected to the system. To use this feature you must login as an administrator.

To start or stop any data session, do as follows:

1. Select **CONNECT**.
   If you are not yet logged in as an administrator, enter the administrator user name and password. The default user name is **admin** and the default password is **1234**. If the password has been changed, contact your system administrator.
   Under ONGOING DATA SESSIONS at the top you can see which data sessions are currently active and which are allowed.
   Example:



   In the example above you could manually start the streaming 128 connection of the GROUP 0 and stop the standard connection of the DEFAULT GROUP.
2. Click on the session you want to start or stop.

Preferred satellite

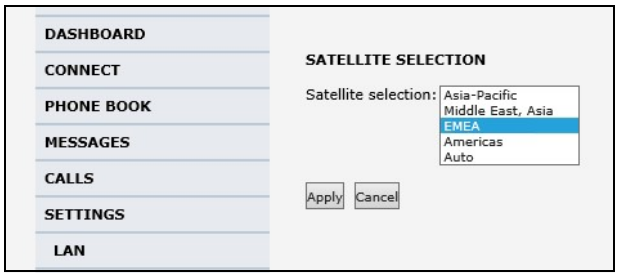
By default the system is set up to automatically find the most appropriate satellite to connect to ("Auto" mode). However, if you are located in an area with more than one satellite available, you can select the satellite you prefer to use when registering on the SwiftBroadband network.

To see the areas covered by the I4 satellites see *SwiftBroadband coverage* on page 8.

Select the preferred satellite

To select the preferred satellite, do as follows:

1. Select **SETTINGS** from the left navigation pane.



2. Select the satellite you prefer to use.
   If you select **Auto** (default setting) the AVIATOR 200/300/350 system automatically uses the most appropriate satellite.

   Important | If you have any ongoing calls or data sessions and you decide to change over to another satellite, the calls or data sessions will be terminated when you click Apply!

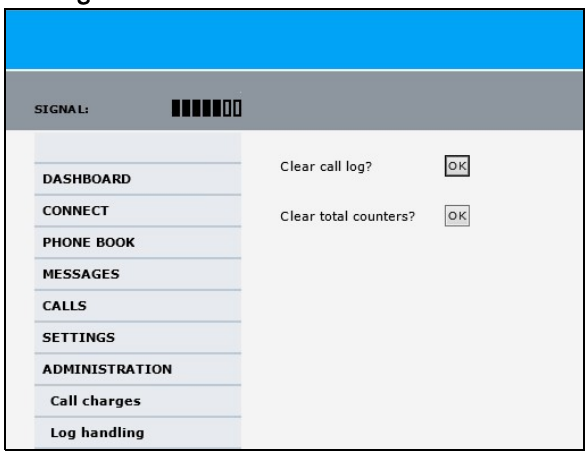
3. Click **Apply**.
   The AVIATOR 200/300/350 terminates all ongoing connections and de-registers from the current satellite before registering on the new satellite.

Note If you have selected a satellite, your AVIATOR 200/300/350 system will only try to establish a connection to the selected satellite. This means that if the antenna is outside the coverage area for that satellite, the AVIATOR 200/300/350 system will not be able to register with the SwiftBroadband network.

Call log handling

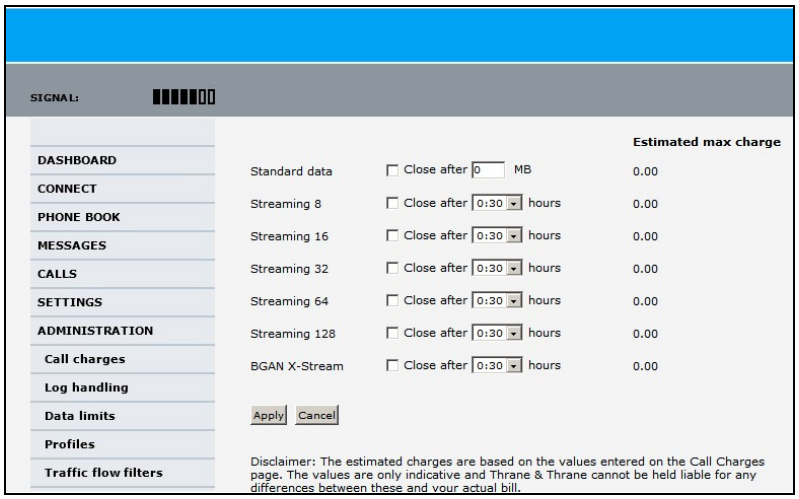
To clear the logs of the system and/or reset the counters for the time connected, do as follows:

1. From the left navigation pane in the **ADMINISTRATION** page, select **Log Handling**.



2. To clear the Call log, click **OK** next to **Clear call log?**.
3. To clear the total counters, click **OK** next to **Clear total counters?**. This resets the **Time connected** counters on the Calls page.

Set data limits



You can set a limit for the use of data services with the AVIATOR 200/300/350 system. You either specify a maximum number of MB for the standard data connection, and/or a time interval from start to end for a streaming connection.

If you have entered the call charges in the menu **Call charges**, the system automatically calculates and displays the maximum charges for your data sessions.

Note Thrane & Thrane A/S does not take responsibility for the correctness of the estimated charges. This calculation is only a rough estimate of the charge, based on the tariff entered by the user. Also, the airtime provider may have different methods of calculating the charge.

Once the entered limit is reached, the connection is automatically stopped. This is recorded in the menu **CALL** containing a call log in which you can see information on standard and streaming data sessions. To continue using

the data services you must start a new connection by clicking on the desired connection on the Dashboard.

Note If you set a data limit for the Standard data connection, automatic activation of the Standard data connections is disabled for all network user groups.

To set data limits, do as follows:

4. From the left navigation pane in the **ADMINISTRATION** page, select **Data limits**.
5. Select the services to close automatically after a fixed amount of data or period of time.
   For Standard data type in the number of mega bytes (MB) allowed.
   For streaming classes select a period of time from the drop down list.
6. Click **Apply** to save the settings.

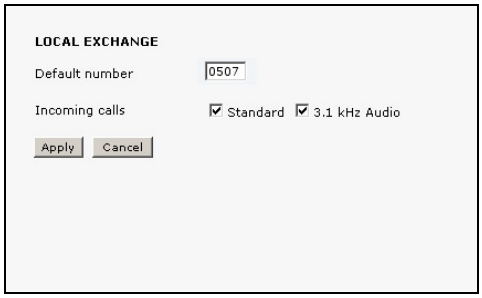
Set up the local exchange function

If you want to call a specific phone connected to the terminal, use the local exchange function. With this function enabled, when you dial the mobile number of the terminal, a recorded message instructs you to dial the number for the local phone you want to call. Your call is then transferred to the requested phone and only the requested phone rings.

If the local exchange is not used (**Incoming calls** not selected), incoming calls will per default cause all connected phones to ring.

To set up the local exchange, do as follows:

1. Select **SETTINGS > Common > Local exchange** from the left navigation pane.



2. Type in the local number to which incoming calls are transferred to if the caller dials * after calling the mobile number, or the caller dials nothing after the recorded message.
3. Select the call types you want to direct to the local exchange.
   If you use 3.1 kHz Audio for a fax machine only, do not select 3.1 kHz Audio as this line is used for the fax.
   If no call type is selected, the local exchange function is disabled (default setting).
4. Click **Apply**.

Remote management

Note You can remotely control the SBU. Some setup tasks must be done before being able to use the remote function. These tasks are described in the following sections.

Prepare the AVIATOR 200/300/350 for remote management

1. Verify that the AVIATOR 200/300/350 is correctly set up for this feature. How to set up this feature is described in the Installation and Maintenance Manual.
2. Activate a data connection in one of the following ways:
   - Remote activation with SMS.
   - Automatic activation of a data connection (not remote).
   - Manual activation of a data connection (not remote).
3. Note the system's external IP address, found in one of the following ways:
   - Unmanned SMS activation: You will receive an SMS with the IP address when the system is powered up and operational.
   - Connect a computer locally to the system and start the web interface. The IP address of the system is shown in the Dashboard under ONGOING DATA SESSIONS (in parenthesis).

   This is the IP address you must use to access the system remotely.

   If Static IP address is included in your airtime subscription, we recommend using this IP address for the system in order to provide easy access to the system.

Access the AVIATOR 200/300/350 from a remote location

To access the SBU from a remote location, do as follows:

1. On the remote computer, open a web browser.
2. Enter the IP address of the SBU followed by colon and the port number **http://<ip address>:<incoming port>**.
   - <ip address> is the address from step 3 above.

   Note Contact your installation center for further information on the SBU IP address and port number. Your system may have a static IP address that is assigned each time when the SBU logs on.

   - <incoming port> is the port that has been defined during system installation.

   Example: If the IP address of the SBU is 161.30.180.12 and the incoming port number defined in the Remote management page in the web interface is 8080, enter **http://161.30.180.12:8080**.

You are now connected to the SBU from the remote computer.

Remote activation with SMS

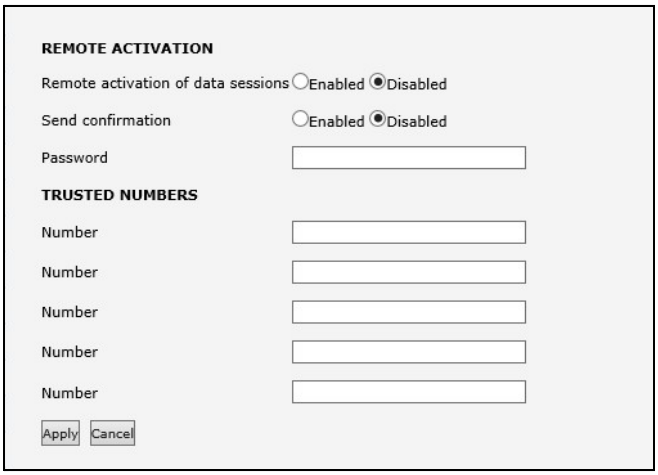
If you want to remotely control the system, it must have activated a connection. You can do this by sending an SMS to the system. The system must be powered up and logged on to the satellite services to receive the SMS and then start the connection. The SMS activation is always protected by a password. You can set up the system to send an SMS confirmation on the status of the connection, whether it is activated successfully or the activation failed.

Note The system must be logged on to the satellite services to receive and accept an activation SMS. If the SMS is considered too old or sent before the system has been switched on and has logged on, the SMS will be ignored.

Important This service is available if the service provider has an interoperability agreement with Inmarsat that allows for roaming. If in doubt, contact your service provider.

To set up the system for remote activation with SMS, do as follows:

1. From the left navigation pane, select **ADMINISTRATION > Remote activation**.



2. Select whether remote activation should be **Enabled** or **Disabled**.

3. Select whether confirmation by SMS should be **Enabled** or **Disabled**.
4. Enter the password. It can be up to 32 characters long. The characters 0-9, a-z and A-Z are allowed. The password is mandatory and must match the password in the activation SMS.
5. Enter at least one trusted mobile number from which the system accepts an activation SMS. If no numbers are entered the feature is disabled automatically. Use the wild card * to accept a range of trusted numbers.

Mobile number with wild card	Mobile numbers accepted
00453955880*	004539558800 to 004539558809
0045395588*	004539558800 to 004539558899

6. Click **Apply** to save the new settings.

SMS format

The activation SMS must have the following format for activating and deactivating a connection in the SBU:

- `ACTIVATE` <name of network user group>:<name of profile> <password>
- `DEACTIVATE` <name of network user group>:<name of profile> <password>

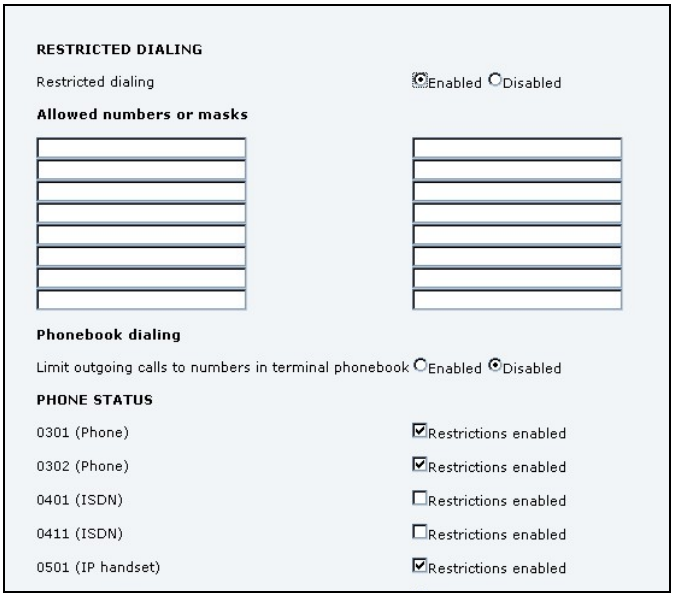
The password is case sensitive, the words ACTIVATE and DEACTIVATE are not.

Examples for SMS

- Open a Standard data connection in the Default network user group:
  `ACTIVATE default group:standard 1234567890`
- Close a Streaming 32 connection in the network user group Group 0:
  `DEACTIVATE Group 0:streaming 32 1234567890`

Note that one profile is allowed per SMS.

Restricted dialing



In order to manage the use of the system efficiently you can set up the system to limit all calls to allowed numbers or numbers in the phone book. This feature can be enabled for each connected handset separately. Each handset has its own local number.

To set up the system for restricted dialing, do as follows:

1. From the left navigation pane, select **ADMINISTRATION > Restricted dialing**.
2. Select whether restricted dialing should be **Enabled** or **Disabled**.
3. Type in the allowed numbers or masks in the entry fields.
   The numbers or masks must be max. 32 digits and may start with **+**. No other special characters are allowed. A mask is the first part of a

phone number, and it covers all numbers that start with that first part. See the example below.

Mask	Numbers accepted
00453955880	004539558800 to 004539558809
+45395588	004539558800 to 004539558899

4. Select whether outgoing calls should be limited to the numbers in the terminal phone book (Enabled) or not (Disabled).
5. Check which local numbers are available in your system. Then select for which local numbers you want to enable the restriction.
6. Click **Apply** to apply the new settings.

Troubleshooting

In this chapter

In this chapter you can read about:

- *Get support*
- *Troubleshooting guide*

Get support

If this manual does not provide the remedies to solve your problem, you may want to contact your service provider, your aircraft installation and service center or your local distributor.

The web interface provides a help desk, event logs and event lists. The system can also generate a diagnostic report for service and maintenance purposes.

Airtime support

If you need assistance from your service provider, call the help desk. To see the help desk number, enter the web interface of your system and select **HELP DESK**. This displayed help desk number is either taken from the SIM card or entered manually. If no number is available under HELP DESK, check the documentation of your service provider for a contact number.

System support

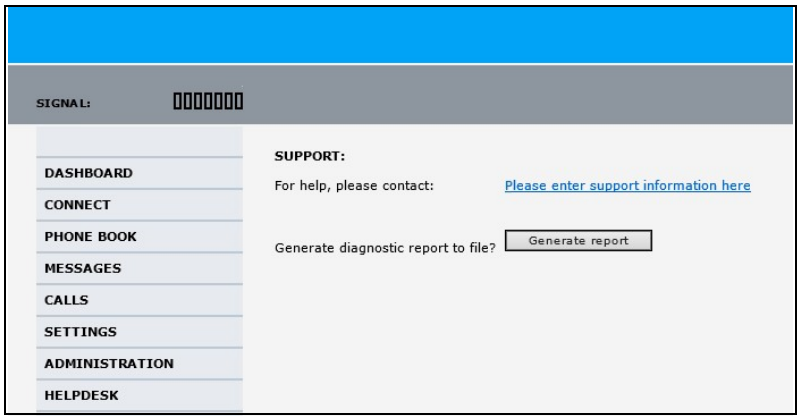
If you need assistance when solving problems caused by the system or antenna, please call a distributor in your area.

A list of certified partners and distributors is available on Cobham SATCOM's web site: www.cobham.com/satcom. Select **Technical Service Partner List**.

Access the Help desk

If you need help **with airtime-related issues** you may call the Help desk. By default, the Help desk is the phone number for your Airtime Provider, if it is available on the SIM card.

To access the Help desk, select **HELP DESK** from the left navigation pane.



If the Help desk number is available on the SIM card, the number is displayed as a link. To change the number, click the link, change the number and click **Apply**.

If you need help **with system or antenna related issues** call your local distributor.

Generate a diagnostic report

The AVIATOR 200/300/350 system can generate a diagnostic report. This report contains information relevant for the service personnel during maintenance and troubleshooting. If you have reason to believe the system is malfunctioning you can generate such a report, save it and send it to the system responsible.

To generate a diagnostic report, do as follows:

1. Reboot the system.
2. Establish the problem or situation in which the error occurred, or
3. Make a CS call (if possible), i.e. make a call with one of the handsets connected.
4. Make a PS call (if possible), i.e. establish a data connection. See *Start or stop a Standard connection* on page 32.
5. Click **Generate report** from the **HELP DESK** page.
   In some browsers the file may open directly in your browser. If it does, choose **File > Save As** to save the file.
6. Choose a location for the file and save it on your computer.
7. Send it to your system administrator.

Event logging and self test

The AVIATOR 200/300/350 system logs events and results from self tests. This information is useful during maintenance and troubleshooting. For further information how to view the event list and the event log and how to make a self test see the AVIATOR 200/300/350 Installation and maintenance manual.

Troubleshooting guide

The below table provides information on some of the problems that might occur, including possible causes and remedies to solve the problems.

Problem	Possible Cause	Remedy
No signal or weak signal from the BGAN satellite.	The view to the satellite is blocked.	There might be some temporary loss of signal due to parts of the plane blocking for a clear view of the satellite. This temporary loss of signal will pass when the antenna has a full view of the satellite again.
	The system is not fully operational.	Wait until the system is powered up and fully operational. There might be an indicator in the cabin indicating that the satcom system is ready for use.
	The system is set up to use a specific satellite, but the system is outside coverage from that satellite.	Enter the web interface. Select **SETTINGS**. At **Satellite selection**, select **Auto** and click **Apply**. The system will now search for the satellite with the strongest signal and attempt to connect.

Problem	Possible Cause	Remedy
Connection to the Internet cannot be established.	Your system is setup to start a connection in the web interface manually.	Open your Internet browser and enter the default IP address of the SwiftBroadband Unit: http://192.168.0.1 (default address). Click Start Standard to open a standard data connection manually. For more details see *Start or stop a Standard connection* on page 32.
	WLAN security not set up correctly.	Contact your system administrator for encryption keys for your Wireless interface.
	No Wireless in the cabin.	You try to make a connection using the Wireless access point. This feature is not enabled or not installed. Use a LAN connection instead.
	Your network user group does not allow Internet access.	Contact the administrator to change your network user group to allow Internet access. You might need to start a standard data connection. See *Start or stop a Standard connection* on page 32.

Problem	Possible Cause	Remedy
The web interface cannot be accessed.	The browser of your PC is configured to use a proxy server.	For Microsoft Internet Explorer, select **Tools > Internet Options > Connections > LAN Settings** and uncheck **Use a proxy server for your LAN**.
	You have entered a wrong IP address.	Check the IP address and re-enter it. Default value: http://192.168.0.1. Send a ping request in the command prompt window. If you do not have the correct IP address, contact your system administrator.
	WLAN security not set up correctly.	Contact your system administrator for encryption keys for your Wireless interface.
	No WLAN in the cabin.	You try to make a connection using WLAN, but there is no WLAN antenna in the cabin. Use a LAN connection instead.
	You are connected using a VPN connection.	Close down your VPN connection.

Problem	Possible Cause	Remedy
A Phone/Fax connection cannot be established.	The phone cable is not properly connected.	Connect the phone cable.
	The cable type or connector type is not correct.	For information on the correct type of connector and cable, refer to the installation manual.
	Incoming calls: The call type used for the call is not selected in the web interface.	Make sure the call type used for calls to the system is selected in the web interface. Access the web interface and select **SETTINGS** > **Phone/Fax**. Then, for each of the two ports, select the call type for incoming calls.
	The fax machine times out.	Set the fax machine to overseas mode, allowing for longer time intervals before timing out.
	If you are located in an elevation area < 45˚ and you have an AVIATOR 300 or an AVIATOR 200, 3.1 kHz Audio (Premium voice) is not supported.	Use Standard voice in stead of 3.1 kHz Audio (Premium voice) when you are located in areas with < 45˚ elevation.

Problem	Possible Cause	Remedy
An ISDN connection cannot be established	The cable is not properly connected.	Connect the cable.
	You have connected to the LAN interface.	Connect the cable to the interface marked ISDN.
	The cable type or connector type is not correct.	For information on the correct type of connector and cable, refer to the installation manual.
	Incoming phone calls: The call type used for the call is not selected in the web interface.	Make sure the call type used for calls to the system is selected in the web interface. Access the web interface and select **SETTINGS** > **ISDN**. Then select the call type for incoming calls.
	If you are located in an elevation area < 45° and you have an AVIATOR 300 or an AVIATOR 200, 3.1 kHz Audio (Premium voice) is not supported.	Use another service. You may still use the ISDN interface on the system, but only Standard voice is available.

Problem	Possible Cause	Remedy
A LAN connection cannot be established.	The cable is not properly connected.	Connect the cable.
	You have connected to the ISDN interface.	Connect the cable to the interface marked LAN.
	The cable type or connector type is not correct.	For information on the correct type of connector and cable, refer to the installation manual.
The administrator password does not work.	The administrator password has been changed.	If the correct password is not found, you have to reset the password. Contact your system administrator, then your supplier for a reset code. You must provide the serial number and IMEI number of the SwiftBroadband Unit.

2-Wire Handset use

Description

The 2-Wire Handset has three sections:



- Light Emitting Diodes (LED) section. This section gives you visual indications about the operation and status of the system.
- Function keys section. This section gives you access to a few call functions, such as transfer of calls, memory etc.
- Alpha-numeric section. This section enables you to dial numbers.

The 2-Wire Handset has a volume control placed on the side of the handset.

Light emitting diodes

There are two LEDs on the 2-Wire Handset.

- Green LED (left) is constantly on when the handset is off-hook.
- Green LED (right) flashes to indicate that the handset is ringing. When a connection is made, the LED is turned off.

Function keys

Using the function keys you can transfer calls, re-dial, store and recall phone numbers, and mute the microphone. The following table describes each function key.

Key	Function
STO	Store number. This key is used to store phone numbers.
MEM	Memory. This key is used to recall phone numbers from the memory.
R	Transfer call. This key is used to transfer an incoming call to another handset.
M1	Memory location 1. (Same function as MEM 1)
M2	Memory location 2. (Same function as MEM 2abc)
M3	Memory location 3. (Same function as MEM 3def)
	Redial. This key is used to redial the last dialled number.
Mute	Mute. This key is used to mute the microphone.
	Toggle hook. This key is used to toggle between on-hook and off-hook.

Alpha-numeric keys

The numeric keys are primarily used to dial numbers or to enter numbers to be stored in memory.



Key	Available Characters or Functions
1	1
2 abc	2 a b c
3 def	3 d e f
4 ghi	4 g h i
5 jkl	5 j k l
6 mno	6 m n o
7 pqrs	7 p q r s
8 tuv	8 t u v
9 wxyz	9 w x y z
*	Special function
0	0
#	This key is used to indicate the end of a phone number or to activate a call.

Operation

Make a call with the 2-Wire Handset

Making a call from a normal 2-wire POTS phone connected to one of the two analogue POTS phone interfaces is done in the same way as a call from a standard telephone, but always with the prefix 00 and # after the number to signal to the SwiftBroadband Unit, that the number is complete.

Example: To call Cobham SATCOM VA in USA (country code 1) first establish a connection by pressing or taking the handset off the cradle. Then press the following keys on the phone:

0 0 1 7pqrs 5jkl 7pqrs 4ghi 6mno 3def 9wxyz 5jkl 5jkl 7pqrs #

To learn how to make local calls see *To make local phone calls* on page 41.

Answer a call with the 2-Wire Handset

Answering a call to the Auxiliary handset can be done in two ways:

- If the handset is in the cradle, simply take the handset from the cradle to answer the call.
- If the handset is out of the cradle, press to answer the call.

Manage phone numbers in the 2-Wire Handset

The Auxiliary handset can store up to 10 phone numbers, in memory location 0 to 9. The M1, M2 and M3 keys can be used for accessing memory location 1, 2 and 3, whereas the other locations are accessed using the MEM key followed by the number of the location.

To store a number using M1, M2 and M3

Do as follows:

1. Press or take the handset off the cradle.
2. Press STO.

3. Enter the phone number you want to store, including country code.
4. Press STO.
5. Press M1, M2 or M3 depending on the memory location you want to save the number in.
   The number is now available in the memory location you selected.

   Example: To save the phone number of Cobham SATCOM VA in memory location 2, take the handset off the cradle and press the following keys:

STO
0 0 1 7pqrs 5jkl 7pqrs 4ghi 6mno 3def 9wxyz 5jkl 5jkl 7pqrs
STO
M2

To store a number using the number keys

Do as follows:

1. Press or take the handset off the cradle.
2. Press STO.
3. Enter the phone number you want to store, including country code.
4. Press STO.
5. Press one of the keys 0 to 9, depending on the memory location you want to save the number in.
   The number is now available in the memory location you selected.

Example: To save the phone number of Cobham SATCOM VA in memory location 8, take the handset off the cradle and press the following keys:

STO
0 0 1 7pqrs 5jkl 7pqrs 4ghi 6mno 3def 9wxyz 5jkl 5jkl 7pqrs
STO
8tuv

To recall a number using M1, M2 and M3

To recall a phone number from memory location 1, 2 or 3 using the M1, M2 and M3 keys, do as follows:

1. Press the handset key or take the handset off the cradle.
2. Press M1, M2 or M3, depending on which memory location you want. The number saved in the memory location is dialled.

Example: To call the number saved in memory location 3, first establish a connection by pressing the handset key or taking the handset off the cradle. Then press M3. The number saved in memory location 3 is dialled.

To recall a number using MEM and the number keys

To recall a phone number from memory using the MEM key, do as follows:

1. Press the handset key or take the handset off the cradle.
2. Press MEM followed by the number of the memory location you want. The number saved in the memory location is dialled.

Example: To call the number saved in memory location 8, first establish a connection by pressing the handset key or taking the handset off the cradle. Then press MEM 8tuv. The number saved in memory location 8 is dialled.

Note | Pressing M1 has the same effect as pressing MEM 1.

Transfer a call with the 2-Wire Handset

You can receive a call on a 2-Wire Handset and transfer the call to another handset.

To transfer a call do as follows:

1. When an incoming call is received, answer the call as usual with ☎ or simply lift the handset from the cradle.
2. Place the call on hold with R.
3. Dial the Interface Code of the desired handset, e.g. 2abc for Handset #2.
4. Initiate handset to handset call with #.
   You have now established an active call from handset to handset, and you can give a short message.
5. Route the incoming call to the new handset by pressing ☎, or placing the handset in the cradle.

Redial a number

To call the last dialled number, first establish a connection by pressing ☎ or taking the handset off the cradle. Then press ◯● followed by #.

Mute the microphone of the 2-Wire Handset

To mute the microphone of the handset, press Mute. To return to normal microphone function, press Mute again.

Conformity

FCC

15.19 / RSS-GEN

NOTICE:
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

15.21

NOTICE:
Changes or modifications made to this equipment not expressly approved by (manufacturer name) may void the FCC authorization to operate this equipment.

15.105

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by

turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

ICES-003

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

NOTICE:
This Class [B] digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.

A

ACARS	Airborne Communications Addressing and Reporting System
AMBE	Advanced Multi-Band Excitation. Speech coding standard used by the Inmarsat satellite telephony system.
AMER	Americas (Satellite coverage)
ANSI	American National Standards Institute, facilitates the voluntary establishment of standards.
APAC	Asia Pacific (Satellite coverage)

E

EMEA	Europe, Middle East, Africa (Satellite coverage)

F

FNBDT	Future Narrowband Digital Terminal. A US Government standard for secure voice communication.

I

ICAO	International Civil Aviation Organization
IEEE	Institute of Electrical and Electronics Engineers
IMEI	International Mobile Equipment Identity. A unique number identifying your terminal
IMSI	International Mobile Subscriber Identity
IMSO	International Maritime Satellite Organization

IP	Internet Protocol, used for communicating data across a packet-switched internetwork.
ISDN	Integrated Services Digital Network
ISP	Inmarsat Service Provider

K

kbps	kilobits per second

L

LAN	Local Area Network
LGA	Low Gain Antenna

M

MB	Mega Bytes
MEAS	Middle East and ASia

N

NAT	Network Address Translation. In the BGAN network you can have one public IP address and several private IP addresses.

P

PBX	Private Branch Exchange, a telephone system that switches calls between users on local lines.
PBX	Private Branch Exchange, telephone exchange that serves a particular business or office.
POTS	Plain Old Telephone Service

PS	Packet-Switched. Packet-switched networks move data in separate, small blocks (packets) based on the destination address in each packet.

R

RDI	Restricted Digital Information

S

SB	SwiftBroadband. Simultaneous voice and broadband data up to 432kbps per channel.
SIP	Session Initiation Protocol for setting up, controlling and closing sessions in the Internet. These sessions include Internet telephone calls, instant messaging and multimedia conferences.
SMS	Short Messaging Service
STE	Secure Terminal Equipment
STU	Secure Telephone Unit

T

TCP	Transmission Control Protocol. One of the core protocols of the Internet protocol suite. TCP provides reliable, in-order delivery of a stream of bytes, making it suitable for applications like file transfer and e-mail.

U

UDI	Unrestricted Digital Information

UTC	Coordinated Universal Time. The International Atomic Time (TAI) with leap seconds added at irregular intervals to compensate for the Earth's slowing rotation. Leap seconds are used to allow UTC to closely track UT1, which is mean solar time at the Royal Observatory, Greenwich.

V

VPN	Virtual Private Network, e.g. secure communications through the public Internet.

W

WLAN	Wireless Local Area Network

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