AVIATOR 200/300/350

Installation & maintenance manual

COBHAM

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The information, drawings and wiring diagrams contained in this manual are intended as a reference for engineering planning only. The drawings and wiring diagrams contained herein do not represent any specific Supplemental Type Certificate (STC). It is the installer's responsibility to compose installation drawings specific to the aircraft. This manual and the drawings and wiring diagrams contained herein may not be used as a substitute for an STC package.

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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.

Record of revisions

Rev.	Description	Release Date	Initials
A	Original document	12 March 2008	CC
B	General update to version B.	25 September 2008	UFO
C	Configuration of interfaces and network management added. Specifications and DO-160 string of the HLD updated. Editorials.	28 November 2008	UFO
D	Page iii: Disposal added The following chapters have been added: 6.7.7 The following chapters have been edited: 2.1.1, 2.3.4, 5.1.2, 5.2.2-5.2.4, 5.3.3, 5.3.4, 5.3.6, 5.3.7, 5.3.10, 5.4.3, 5.4.5 - 5.4.7, 6.2.2, 6.5, 6.6.1, 6.6.3 - 6.6.5, 6.6.8 - 6.6.13, 6.7.7, 6.8.7, 7.4.2, 7.5.4, 7.7 The following appendices have been added: E, F The following tables have been added: 5-12, 6-3, 6-4 The following tables have been edited: 2-1, 2-3, 2-5, 4-3, 5-21, 5-22, 5-28, B-1, B-2, B-3, The following figures have been added: 2-3, 2-4, 3-7, 5-6, 5-9, 7-5 The following figures have been edited: 3-10, 3-11, 5-16, 6-2, 6-52	7 May 2009	UFO
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F	The following chapters have been added: 3.13, 6.1.1, 6.5.9, 6.6.9, 6.7.1, The following chapters have been edited: 1.1, 2.1, 2.1.1, 2.2.2, 3.1, 3.10, 5.2.5, 5.3.7, 5.4.6, 6.3.2, 6.5.4, 6.7.2, 7.1.1, 7.3, A-3, B.2.1, B.3, B.3.1, H.1.2. The following tables have been edited: 1-1, 2-3, 2-7, 5-1, 5-6, 5-9, 5-29, 6-3, A-1, A-2, A-3, A-4, A-5, A-6, A-7, The following figures have been edited: 2-1, 3-1, 3-4, 5-1, 6-9, 6-10, 6-28, 6-30, 6-34.	16 March 2012	UFO
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I	The following sections have been added: 5.3.0, page 6-1 Important note The following sections have been edited: 2.2.1, 3.13, 4.3, 5.3.1, 5.3.14, 5.3.15, 6.1.1, 6.5.4, 6.5.7, 6.5.13, 6.5.15, 7.1.1, 7.3,, The following tables have been edited: 2-1, 2-4, 2-5, 2-10, 2-11, The following figures have been added: 3-1, 3-2, 3-7, 3-11 The following figures have been edited: 3-1, 3-2, 3-3, 3-4, 3-5, 3-8, 3-9, 5-5, 5-10, 7-3,	22 June 2020	UFO

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Chapter 6   Configuration of the AVIATOR 200/300/350 system

About this manual

1.1 Purpose

The purpose of this manual is to provide information for installation, maintenance and troubleshooting of the AVIATOR 200/300/350 system. This manual covers AVIATOR 200/300/350 and AVIATOR 200D/300D/350D.

> **Important** The information, drawings and wiring diagrams contained in this manual are intended as a reference for engineering planning only. The drawings and wiring diagrams contained herein do not represent any specific Supplemental Type Certificate (STC). It is the installer's responsibility to compose installation drawings specific to the aircraft. This manual and the drawings and wiring diagrams contained herein may not be used as a substitute for an STC package.

1.2 Organization

The chapters of this Installation Manual provide the following information:

- **Introduction**. A short overview of the AVIATOR 200/300/350 system and services.

- **Equipment Drawings**
  Outline drawings of the units and connectors of the AVIATOR 200/300/350 system.

- **Connectors**
  Drawings and pin-out for the connectors, and a description of the required mating connectors.

- **Installation**
  Wiring drawings and detailed installation and wiring requirements.

- **Configuration**
  An introduction to the SwiftBroadband Unit's web interface, and a description of how to configure the AVIATOR 200/300/350 system. A procedure how to calibrate the Satcom antenna and a short description of how to configure some of the 3rd party handsets.

- **Maintenance and Troubleshooting**
  Descriptions of Airworthiness, help desk, software update, LEDs, BITE test and how to return units for repair.

- **Appendices**
  Equipment specifications, DO-160 Forms, installation of an Iridium Band Reject Filter, WLAN country codes, SIP setup for Wifi enabled phones and a list of applicable standards.

1.3   Related documentation

Part number	Description
98-127719	AVIATOR 200/300/350 User Manual
98-127720	AVIATOR 200/300/350 Quick Guide
98-129599	AVIATOR Wireless Handset and Cradle User Manual
98-129600	AVIATOR Wireless Handset and Cradle Installation & Maintenance Manual
98-128279	Intermediate Gain Antenna Installation Manual

Table 1-1: List of Related Documentation

1.4   Precautions: Warnings, Cautions and Notes

Text marked with "Warning", "Caution", "Note" or "Important" show the following type of data:

- **Warning**: A Warning is an operation or maintenance procedure that, if not obeyed, can cause injury or death, or jeopardize the flight safety on the aircraft.

- **Caution**: A Caution is an operation or maintenance procedure that, if not obeyed, can cause damage to the equipment.

- **Note**: A Note gives information to help the reader.

- **Important**: A text marked Important gives information that is important to the user, e.g. to make the system work properly. This text does **not** concern damage on equipment, flight safety nor personal safety.

General precautions

All personnel who operate equipment or do maintenance as specified in this manual must know and follow the safety precautions. The warnings and cautions that follow apply to all parts of this manual.

> ⚠️ **WARNING!**   Before using any material, refer to the manufacturers' material safety data sheets for safety information. Some materials can be dangerous.

> ⚠️ **CAUTION!**   The AVIATOR 200/300/350 system contains items that are electrostatic discharge sensitive. Use approved industry precautions to keep the risk of damage to a minimum when you touch, remove or insert parts or assemblies.

Introduction

This chapter has the following sections:

- *General description*
- *Application*
- *System block diagrams*

2.1 General description

This manual describes the administrative and technical aspects, features, functions and components of the AVIATOR 200/300/350 system. All comments or recommendations regarding the installation, acceptance or operation of the system or its accessories and components should be directed to Cobham.

> **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.

2.1.1 The AVIATOR 200/300/350 system

Overview

The AVIATOR 200/300/350 system is a compact, light-weight aeronautical satcom system that uses Inmarsat's SwiftBroadband services.

The AVIATOR system consists of the following units:

- TT-5040A SBU SwiftBroadband Unit
- TT-5040A-001 or TT-4050A-8xy CM Configuration Module, inserted in the SBU. The CM also holds the SIM card, which provides access to the SwiftBroadband services. The SIM card is included in the delivery.
- TT-5016A HLD High Power Amplifier, Low Noise Amplifier and Diplexer in one unit.

These units must be connected to a satcom antenna. See section *Satcom antenna systems* on page 2-5 for supported antenna types and model numbers.

The following drawing shows the AVIATOR 200/300/350 cabin installation with connected communication devices and available options:
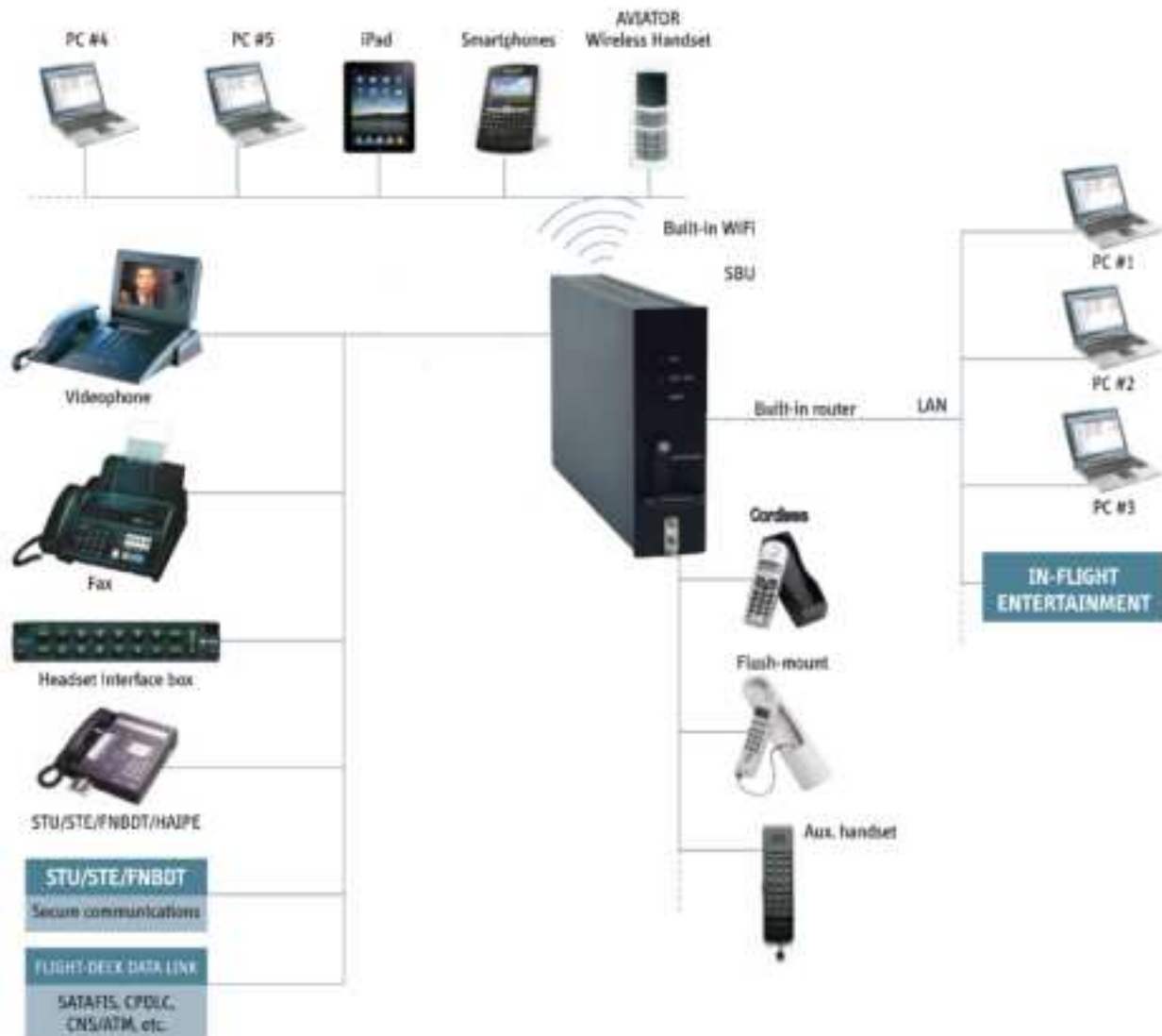
Figure 2-1: Communication devices (example for a Level E system)

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[b]
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 2-1: SwiftBroadband services for supported antenna types

a. The elevation needed for services with this antenna type is > 20˚.
b. Data rates are up to 432 kbps. Check with your service provider for activation.

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.

For ISDN service or 3.1 kHz audio and IGA the elevation angle must be larger than 45 degrees. Note that the ISDN service cannot be used by the AVIATOR 200 or the AVIATOR 200D.

The following map shows the SwiftBroadband coverage.

Inmarsat's I4 satellite coverage (AMER, Alphasat, MEAS, APAC)
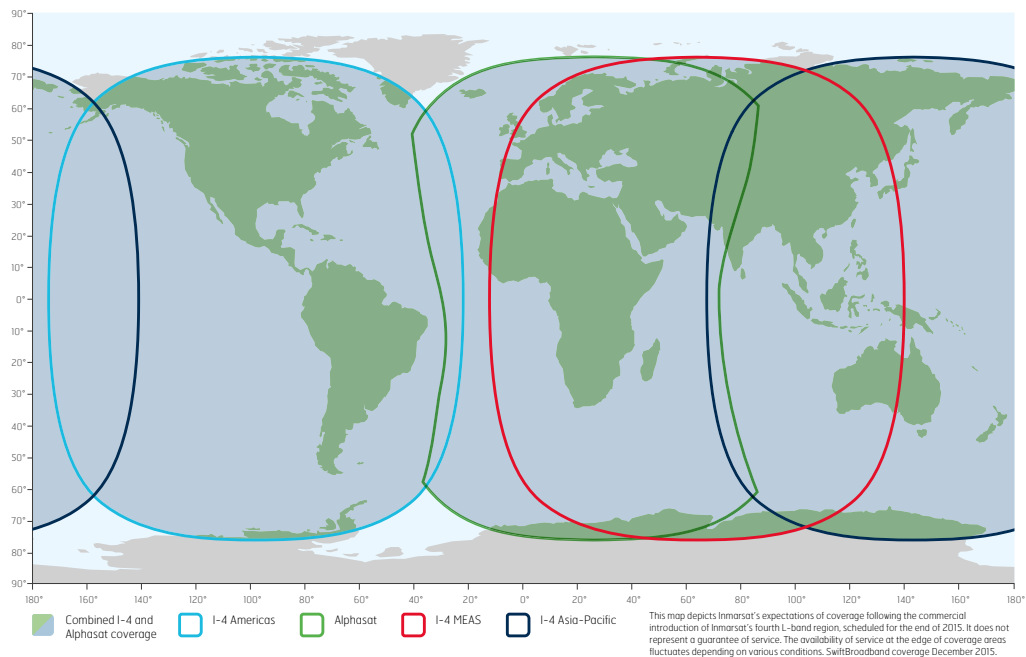
Figure 2-2: SwiftBroadband and classic aeronautical services coverage on I4 satellite

PBX telephone exchange

The built-in PBX telephone exchange unit of the SBU connects two direct 2-wire POTS interfaces for faxes, auxiliary phones, 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.

Configuration Module (CM)

The Configuration Module (CM) for the SBU is inserted in the SBU and holds system and user settings. It is designed as a plug-in module for the SBU, so the SBU can be replaced while retaining all SBU and user settings. The SBU CM contains a permanently built-in SIM card for access to the SwiftBroadband services.

Web interface for configuration

Via the built-in web interface of the SBU you can access the SBU configuration settings in the CM. A subset of the configuration settings are stored in a write-protected area of the CM. This subset contains the physical settings for the antenna, cabling and other external input.

To set up or change the settings of the write-protected area you must connect a PC to the connector marked **Maintenance** on the SBU front plate. You can view all settings from any LAN or WLAN interface. For further information on the web interface, see *Configuration tasks* on page 6-2.

Satcom antenna systems

The AVIATOR 200/300/350 system can be used with a wide range of satcom antennas. The following table shows the Cobham SATCOM antennas that are compatible with the AVIATOR 200/300/350.

System type	Antenna type
AVIATOR 200	LGA-3002/LGA-3000
AVIATOR 300	IGA-5006
	IGA-5001
AVIATOR 350[a]	HGA-6000/HGA-6500
	HGA-7000/HGA-7001 HGA-8000

Table 2-2: Satcom antenna types for the AVIATOR 200/300/350 system

a. For backwards compatibility with previous Aero-SB Lite systems, the AVIATOR 350 can also be used with IGA-5006 or IGA 5001, then the system is an AVIATOR 300.

An AVIATOR 200/300/350 system must only be used with satcom antennas that have received type approval by Inmarsat.

Built-in router and Wireless (WLAN) option

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, this option is 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.

Built-in Multi-voice option

The AVIATOR 200/300/350 system offers a built-in Multi-voice option. With this option multiple calls can be made to and from the system simultaneously. Normally, the BGAN system only supports one call at a time. With the built-in, optional Multi-voice service enabled in your system, you can make multiple calls. The maximum number of concurrent calls depends on your system, see Table 2-1 on page 2-3. If ordered, this option is enabled in the AVIATOR 200/300/350 from the factory. If this option is 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.

> **Note** You must have Multi-voice in your airtime subscription, AVIATOR Wireless Handset software version minimum 1.03 and SBU software version minimum AVIATOR 200/300/350 (Level E): 1.07, AVIATOR 200D/300D/350D (Level D): 2.01, in order to support the Multi-voice function.

For information on how to set up Multi-voice, see *Multi-voice (option)* on page 6-91.

Built-in CMU/ACARS option[1]

The AVIATOR 200/300/350 system offers a built-in CMU/ACARS option. With this option it is possible to connect a CMU or equivalent equipment to the SBU via A429 and send and receive ACARS messages over SwiftBroadband. If ordered, this option is enabled in the AVIATOR 200/300/350 from the factory. If this option is not included from the start, the system can be upgraded at a later stage. Then you receive the FLEX key for the purchased option(s) and enter it in the AVIATOR 200/300/350 web interface. For information on how to set up CMU/ACARS, see *Set up CMU/ACARS (option)* on page 6-51.

SB-Safety Voice option[2]

With the SB-Safety (ICAO) Voice option you can make priority calls (priority level 1, 2 or 3) to and from the cockpit. The 2-wire POTS connection is used for an external dialer and a headset. The SB-Safety Voice service includes:

- Selecting the priority level before placing outgoing calls
- External pre-programmed speed dial numbers with embedded priority (optional)
- Handling priority level for active call
- Handling priority level for incoming call
- Annunciate the call status and SB-Safety Voice service availability via discrete outputs

To be able to use the SB-Safety Voice you must disable the WLAN access point and Multi-Voice in the web interface. ISDN and the second 2-wire POTS interface are disabled when using SB-Safety Voice. If this option is not included from the start, the system can be upgraded at a later stage. Then you receive the FLEX key for the purchased option(s) and enter it in the AVIATOR 200/300/350 web interface.

Note that SB-Safety Voice option may be restricted by regulation and may require Level D.

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1. Supported from software version 1.07 for AVIATOR 200/300/350 (Level E) and 2.01 for AVIATOR 200/ 300/350D (Level D).
2. Supported from software version 3.01 for AVIATOR 200/300/350 (Level E) and 4.00 for AVIATOR 200/ 300/350 (Level D).

Priority levels with an external dialer

If an external dialer is connected to the SBU, you can specify the priority level of outgoing calls when entering phones numbers in the dialer's directory.

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 2-3: Priorities for SATVOICE calls (SB-Safety Voice)[a]

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

The priority level of a call can be part of the phone number. When dialing numbers, the international call prefix can be changed to state the priority level: 01 for priority level 1, 02 for priority level 2 and 03 for priority level 3. Then the phone numbers look as follows (example with 45 country code for Denmark):

- 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

No matter which priority level an outgoing phone call has, the phone number transferred to the PBX is converted to the standard phone number using 00 as international call prefix. The priority can be displayed on a connected annunciator panel.

Coexistence with IRIDIUM satellite phones

An AVIATOR 200/300/350 system can be installed on aircrafts already equipped with IRIDIUM satellite systems. As Inmarsat satcom systems and Iridium satcom systems are using adjacent frequency bands, there is a potential risk of interference when the Iridium system is used at the same time as the Inmarsat system. To avoid this, two filters are needed:

- An Iridium Band Reject Filter, TT-5019A, must be inserted between the SBU and the HLD.

- An INMARSAT Dual RF Filter, Aircell P/N P13167, must be inserted in the antenna coax of the Iridium system.

For further information on installing the Iridium Band Reject Filer see *TT-5019A Iridium Band Reject Filter* on page F-1.

2.1.2 AVIATOR 200/300/350 features

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

- SwiftBroadband channel providing an 'always on' data connection of up to 432 kbps.

- Full duplex, single or multi-user.

- Automatic satellite selection.

- Built-in PBX in the SBU interfacing to two 2-wire connections, one ISDN interface and WLAN in the SBU, and integrated SIP server for VOIP telephony.

- Standard voice.

- 3.1 kHz audio for modems, G3 fax, 14.4 kbps high quality voice etc.

- ISDN voice for Secure communication, G4 fax etc.

- ISDN data for video conferences etc.

- Built-in Router option with DHCP, NAT for six Ethernet interfaces.

- Built-in Wireless option (WLAN) IEEE 802.11 b/g.

- Built-in Multi-voice option, up to 1+8 concurrent calls

- Access to built-in web interface for daily use using LAN and WLAN.

- Built-in CMU/ACARS option

- Built-in web interface for configuration using the Maintenance connector on the SBU front plate.

- Does not affect the operation of an Iridium system.

- SB-Safety Voice (cockpit voice) option (from software 4.00)

Note The availability of some services depends on the satcom antenna type of the system. Check the section *Services* on page 2-3 for an overview of services available for LGA, IGA and HGA.

Software versions

The AVIATOR 200/300/350 is shipped with software version 4.01. Software versions 2.02 and 4.00 are also available. The following table shows the features that are supported for each software version.

Software version	Router	Wifi	CMU/ACARS	Multi-voice	A429 via RS422	SB-Safety Voice
4.01	Yes	Yes[a]	Yes	Yes[a]	Yes	Yes
4.00	Yes	Yes[a]	Yes	Yes[a]	Yes	Yes
2.03	Yes	Yes	Yes	Yes	Yes	-
2.02	Yes	Yes	Yes	Yes	-	-

Table 2-4: Available features for software versions (Level D)

a. Not together with SB-Safety voice and/or ACARS.

Naming of software versions: Level D: 2.xx and 4.xx, Level E: 1.xx and 3.xx.

For Level E, the latest software version covered by this manual is version 3.01.

2.2 Application

2.2.1 Minimum system

A minimum working system has at least:

- one TT-5040A SBU
- one TT-5040A-001 CM
- one TT-5016A HLD
- one satcom antenna: LGA, IGA or HGA

The minimum wiring required for an AVIATOR 200/300/350 system is described in the section *Minimum system drawing* on page 5-2. The CM, HLD and some satcom antennas are powered by the SBU.

Chapter 2: Introduction

2.2.2 Part numbers

Applicable part numbers

This installation manual is for the AVIATOR 200/300/350 system and is applicable to the part numbers in the following tables.

Part number	Unit description
405040A	SwiftBroadband Unit (SBU) [without CM] for AVIATOR 200/300/350
405040A-THD	SwiftBroadband Unit (SBU) [without CM] for AVIATOR 200D/300D/350D
405040A-001	Configuration Module (CM) for SBU (no key and no options)
405040A-002	Built-in Router option
405040A-003	Built-in Wireless option
405040A-004	WLAN Antenna, optional (2 pieces recommended)
405040A-009	Built-in ACARS+SB-Safety (ICAO) voice option
405040A-010	Built-in Multi-voice option
405040A-006	AVIATOR 350 Key (HGA/IGA)
405040A-007	AVIATOR 300 Key (IGA)
405040A-008	AVIATOR 200 Key (LGA)
405016A	High Power Amplifier/Low Noise Amplifier/Diplexer (HLD) AVIATOR 200/300/350
405016A-THD	High Power Amplifier/Low Noise Amplifier/Diplexer (HLD) AVIATOR 200D/300D/350D
403002-001	Low Gain Antenna (LGA). Original Manufacturer Sensor Systems P/N: S65-8282-101 (listed on FAA 8130-3).
405003A-PMA	LGA-3000 Low Gain Antenna (obsolete)
405001A-PMA	IGA-5001 Intermediate Gain Antenna
	HGA-6000 High Gain Antenna
	HGA-6500 High Gain Antenna
	HGA-7000 High Gain Antenna
405017A	HGA-7001 High Gain Antenna

Table 2-5: Part numbers

Part number	Unit description
677-A0163	HGA-8000 High Gain Antenna (obsolete)
405621B-THW	2-Wire Handset (white)
405621B-THR	2-Wire Handset (black)
405622B-THW	2-Wire Cradle (white)
405622B-THR	2-Wire Cradle (black)
405612A-100	PTA-12, Airborne Telephone Adaptor, black
405612A-104	PTA-12, Airborne Telephone Adaptor, gray
403670B-00500	Thrane IP Handset incl. Cradle, Wireless
405624B-THR	AVIATOR Wireless Handset Black
405624B-THW	AVIATOR Wireless Handset White
405626B-THR	AVIATOR Wireless Cradle Black
405626B-THW	AVIATOR Wireless Cradle White
405017A-801	Converter RS-422 toA429 (Serial to A-429 Adapter (SAA))
405019A	Iridium Band Reject Filter

Table 2-5: Part numbers (Continued)

Part number	Configuration module description
405040A-838	CM for SBU with A200 key
405040A-828	CM for SBU with A200 key, Router option(s)
405040A-818	CM for SBU with A200 key, WiFi option(s)
405040A-808	CM for SBU with A200 key, Router, WiFi option(s)
405040A-837	CM for SBU with A300 key
405040A-827	CM for SBU with A300 key, Router option(s)
405040A-817	CM for SBU with A300 key, WiFi option(s)
405040A-807	CM for SBU with A300 key, Router, WiFi option(s)
405040A-836	CM for SBU with A350 key
405040A-826	CM for SBU with A350 key, Router option(s)

Table 2-6: Part numbers for configuration modules and options

Part number	Configuration module description
405040A-816	CM for SBU with A350 key, WiFi option(s)
405040A-806	CM for SBU with A350 key, Router, WiFi option(s)
405040A-878	CM for SBU with A200 key, Multi voice option(s)
405040A-868	CM for SBU with A200 key, Router, Multi voice option(s)
405040A-858	CM for SBU with A200 key, WiFi, Multi voice option(s)
405040A-848	CM for SBU with A200 key, Router, WiFi, Multi voice option(s)
405040A-876	CM for SBU with A350 key, Multi voice option(s)
405040A-866	CM for SBU with A350 key, Router, Multi voice option(s)
405040A-856	CM for SBU with A350 key, WiFi, Multi voice option(s)
405040A-846	CM for SBU with A350 key, Router, WiFi, Multi voice option(s)
405040A-8B6	CM for SBU with A350 key, ACARS/SB Safety (ICAO) voice option(s)
405040A-8A6	CM for SBU with A350 key, Router, ACARS/SB Safety (ICAO) voice option(s)
405040A-896	CM for SBU with A350 key, WiFi, ACARS/SB Safety (ICAO) voice option(s)
405040A-886	CM for SBU with A350 key, Router, WiFi, ACARS/SB Safety (ICAO) voice option(s)
405040A-8F6	CM for SBU with A350 key, Multi voice, ACARS/SB Safety (ICAO) voice option(s)
405040A-8E6	CM for SBU with A350 key, Router, Multi voice, ACARS/SB Safety (ICAO) voice option(s)
405040A-8D6	CM for SBU with A350 key, WiFi, Multi voice, ACARS/SB Safety (ICAO) voice option(s)
405040A-8C6	CM for SBU with A350 key, Router, WiFi, Multi voice, ACARS/SB Safety (ICAO) voice option(s)

Table 2-6: Part numbers for configuration modules and options (Continued)

The flex keys for A350 can also be used in A300 systems.

The SwiftBroadband Unit (SBU) and the High Power Amplifier, Low Noise Amplifier and Diplexer (HLD) must all be level E or level D approved. **No mismatch is allowed.**

Circuit breaker

Part number	Recommended aircraft circuit breakers
2TC2-7.5	Klixon 2TC series, 7.5 A current rating (SBU[a])

Table 2-7: Part numbers for Klixon circuit breaker

a. The CM, HLD and some satcom antennas are powered by the SBU.

Trays and connectors

Part number	Approved tray
PO299-101	ECS Tray Assembly 1/4-size ATR (for SBU)
MT4-2346-101	EMTEQ Tray Assembly 1/4-size ATR (for SBU)
DPX2NA-67322-606 (alternate number: DPX2NA-67322-500)	Required Connector Kit for SBU tray: ITT Cannon Connector, Dual Plug, contact arrangement top: 33C4, bottom: 33C4.

Table 2-8: Part number for connector

Installation kits

For installation kits for the AVIATOR 200/300/350 system contact:

ECS, **a Carlisle IT company**, **USA** Phone (Franklin, WI): +1 800-327-9473 Phone (Kent, WA): +1 800-227-5953 E-mail: sales@CarlisleIT.com Home page: www.CarlisleIT.com	Emteq (Collins Aerospace) 5349 S Emmer Drive New Berlin WI 53151 Phone 262-679-6170 LIS_Sales@beaerospace.com

Table 2-9: Installation kits, contact information

ECS offers installation kits for the SBU.

Item in installation kit
1 ARINC connector, SBU (DPX2NA-67322-500)
1 Tray Assembly, SBU, 1/4-size ATR W/DPX2 (P0299-101)

Table 2-10: ECS installation kit 102-20027-102

Item in installation kit
1 ARINC connector, SBU (DPX2NA-67322-606)
1 Tray Assembly, SBU, 1/4-size ATR W/DPX2 (P0299-101)

Table 2-11: ECS installation kit 120-200027-103

2.3   System block diagrams

The following block diagrams and the wiring diagrams in section 5.3.3 show examples of satcom antennas that can be connected to the AVIATOR 200/300/350 systems.

In order to use the satcom antenna with the AVIATOR 200/300/350 systems, the specific antenna type and the AVIATOR 200/300/350 system must be *Type Approved* by Inmarsat as a combined system. The satcom antenna types supported are listed in *Satcom antenna systems* on page 2-5. AVIATOR 200/300/350 systems will be Inmarsat Type Approved with more antennas as requested by market requirements. Contact your Cobham sales/ support representative for the latest status on Inmarsat Type Approvals for satcom antennas for the AVIATOR 200/300/350 system.

The following block diagrams show the basic system component interconnection and the user interfaces.

2.3.1   AVIATOR 200 system with LGA-3000 antenna

The drawing below shows the AVIATOR 200 system with an LGA antenna.
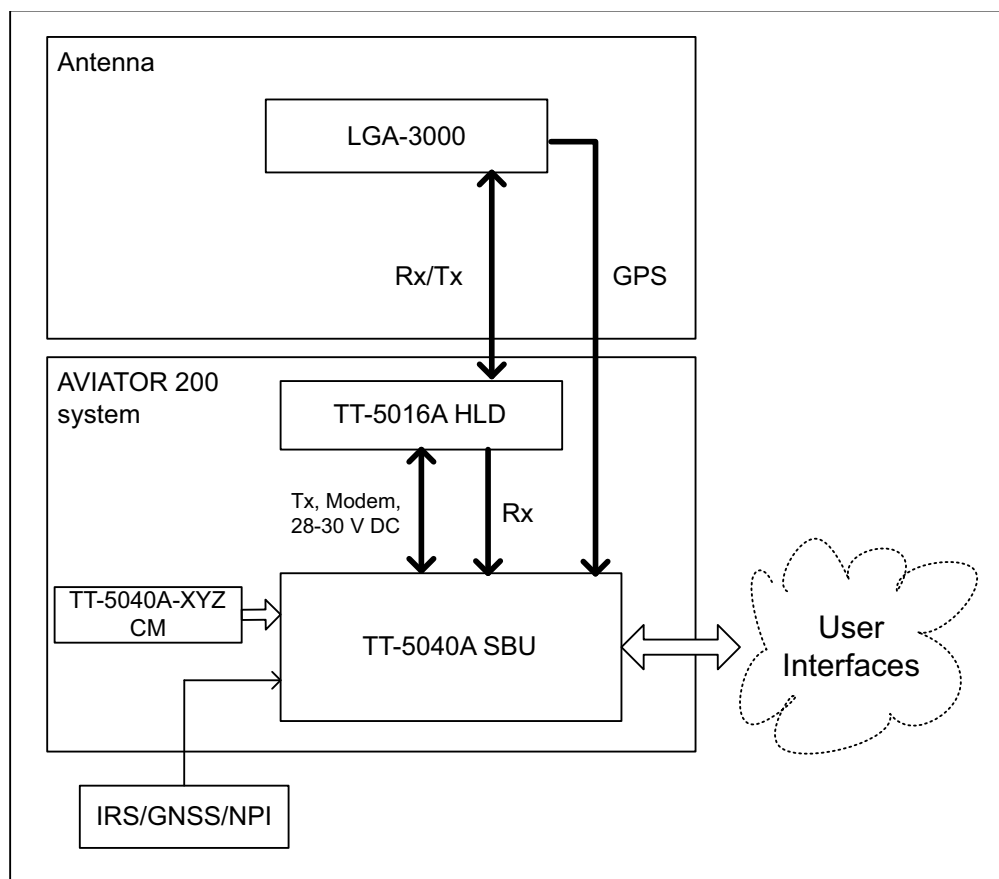

Figure 2-3: System configuration with LGA-3000 antenna

2.3.2   AVIATOR 300 system with IGA-5006 antenna

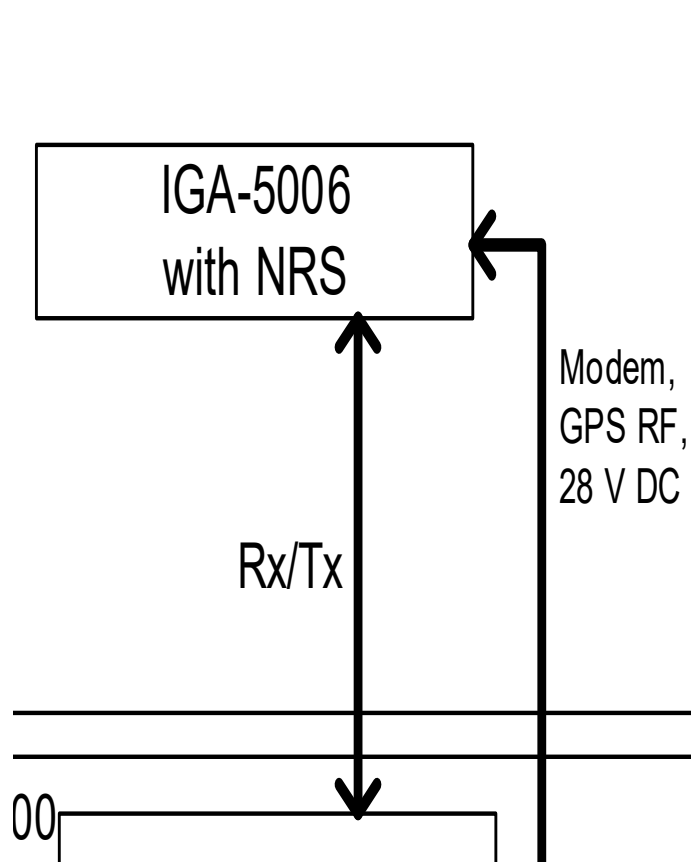The drawing below shows the AVIATOR 300 system with an IGA antenna.

Figure 2-4: System configuration with IGA-5006 antenna

2.3.3 AVIATOR 350 system with Cobham antennas

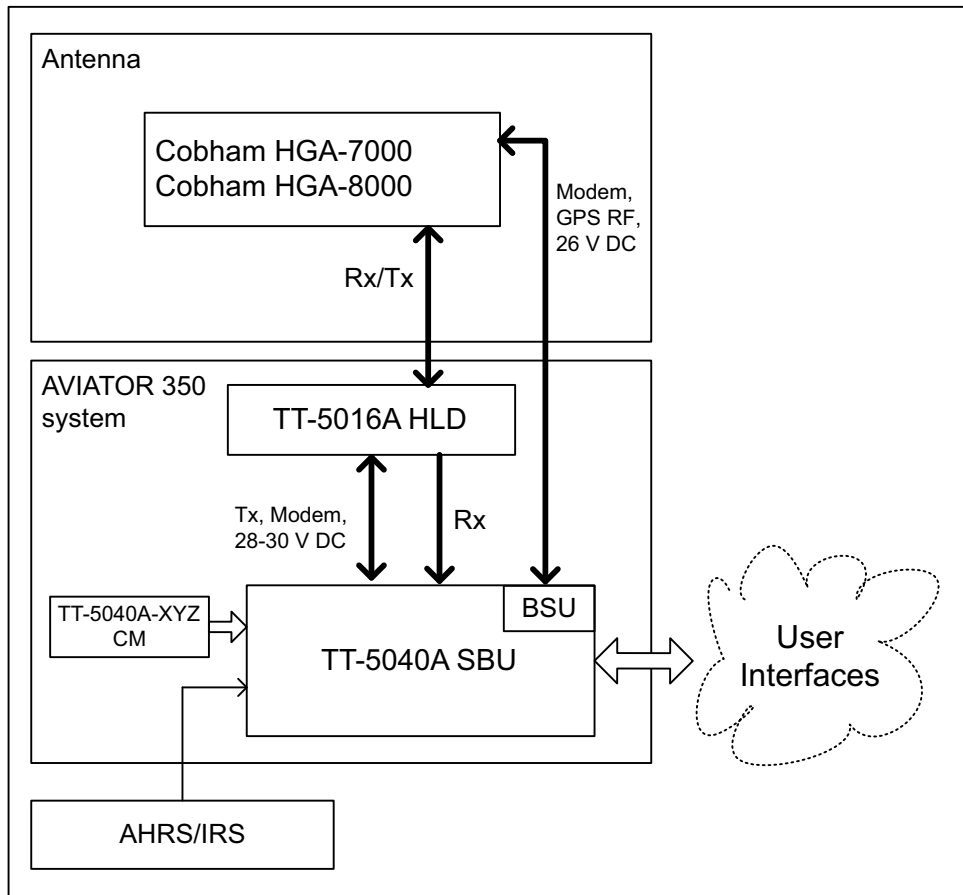The drawing below shows the AVIATOR 350 system with Cobham antennas.

Figure 2-5: System configuration with Cobham antennas

2.3.4 AVIATOR 350 system with ARINC-741/781 antennas

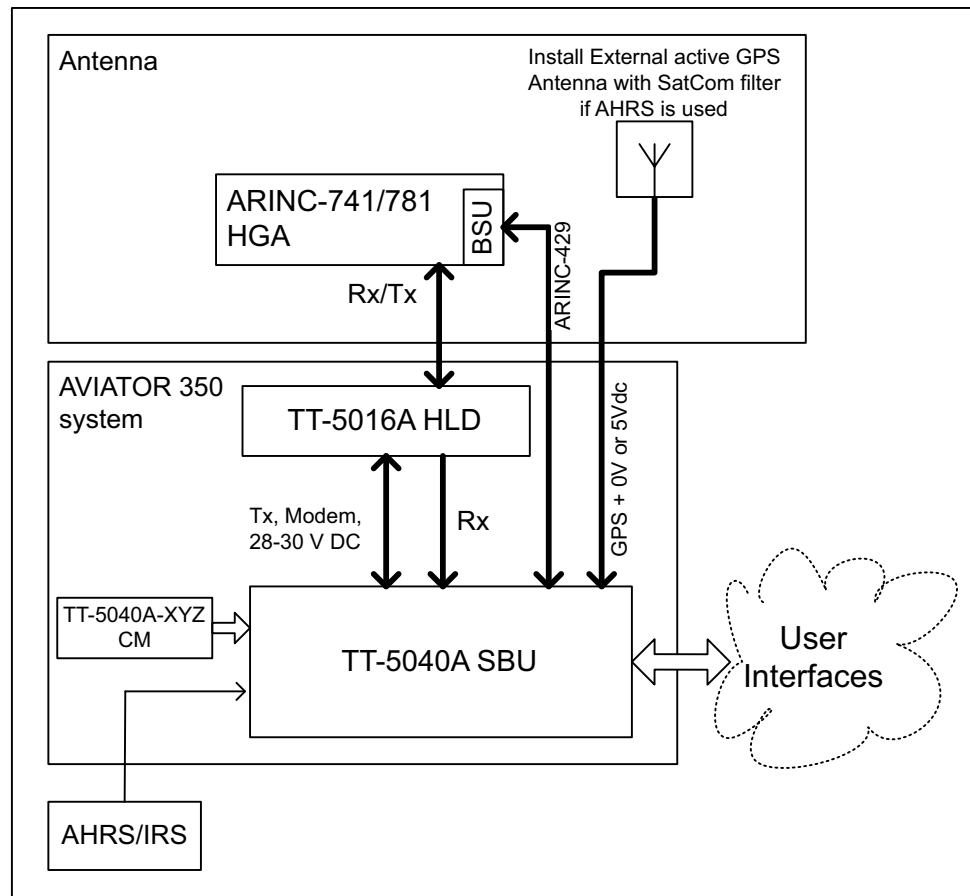The drawing below shows the AVIATOR 350 system with an ARINC-741/781 HGA.

Figure 2-6: System configuration ARINC 429 antennas

For detailed description of the connection of each antenna type, see *Wiring the satcom antenna* on page 5-11.

2.3.5 AVIATOR 350D system with ACARS and ARINC-741/781 antennas

The drawing below shows the AVIATOR 350 system with the HGA-6000/6500 or AMT-50 and ACARS/SB Safety (ICAO) voice.
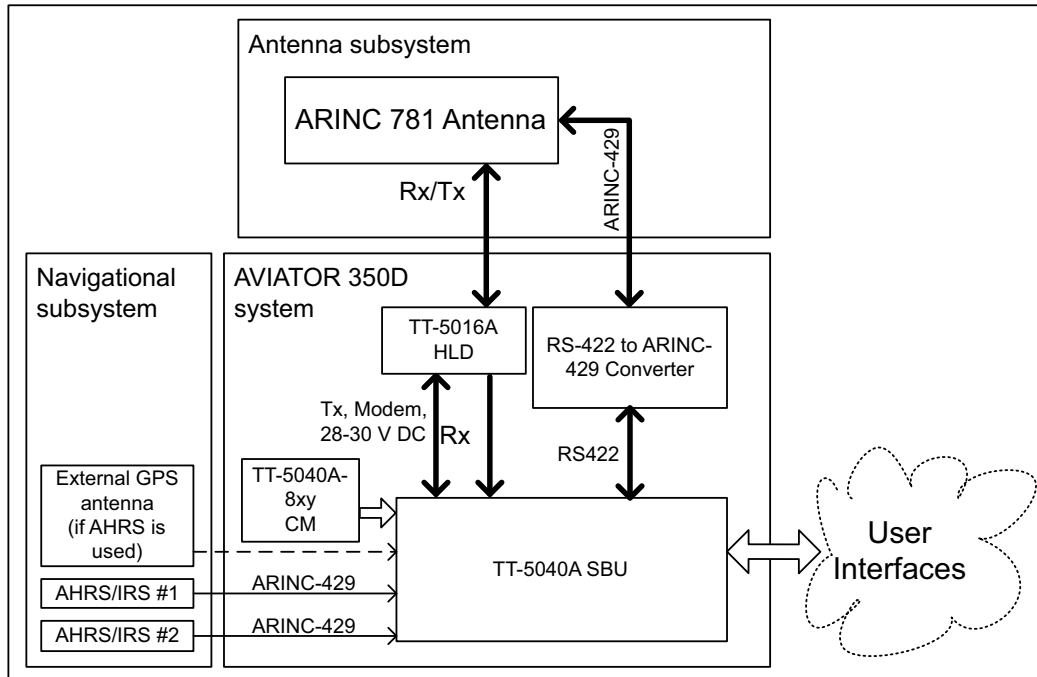

Figure 2-7: System configuration ARINC 429 antennas

For detailed description of the connection of each antenna type, see *Wiring the satcom antenna* on page 5-11.

2.3.6   User interfaces

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

Interfaces	Number
2-wire POTS interface This interface can be used for the TT-5621B 2-Wire Handset and TT-5622B 2-Wire Cradle or other POTS handsets. The TT-5622B 2-Wire Cradle has an RJ11 connector to which additional 2-wire terminals can be connected, e.g. for fax or modem data.	2
10/100BaseT Ethernet interfaces for connecting IP equipment. Note that the SBU has a Built-in Router option. The SBU has an additional Ethernet interface for system configuration (Maintenance connector on the SBU front plate, not shown in the following figure).	6
Built-in Wireless Option with two WLAN antenna interfaces for diversity operation to connect WiFi-enabled equipment like lap tops, PDAs or VOIP handsets.	1 (32 devices)
Euro ISDN S-bus interface for PC, Fax or STE (without DC power support)[a]	1
Discrete outputs for annunciators	4

Table 2-7:

a. Note that the ISDN data service (UDI/RDI) and 3.1 kHz premium voice service cannot be used by the AVIATOR 200 nor the AVIATOR 200D.

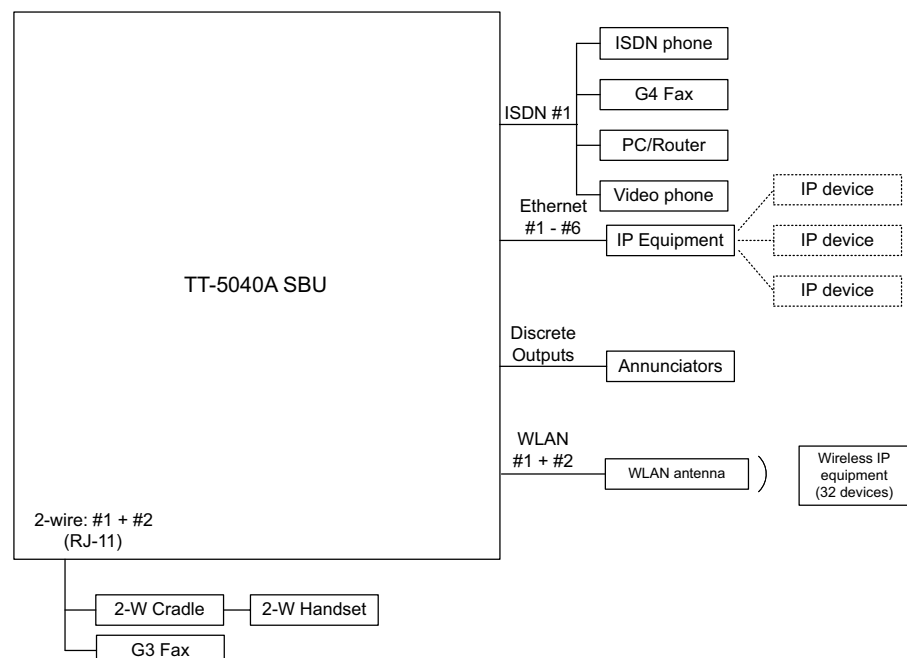The following figure shows most of the possible user interfaces.

Figure 2-8: AVIATOR 200/300/350 interfaces