Thrane & Thrane

AERO-SB+

Wireless broadband for the sky

The Aero-SB+ is a complete aeronautical communications solution. It offers satellite transmitted phone, fax, cockpit data and high speed data services in one system, a solution that is smaller and lighter than any comparable satcom solution.

Features

The Thrane & Thrane Aero -SB+ gives business and VIP jet users access to the Inmarsat Aero-H+ and SwiftBroadband services in one integrated system. It is the most powerful airborne satcom system available today.

- Unique multi-channel solution, integrating the Inmarsat Aero-H+ and SwiftBroadband services
- Extremely compact and lightweight
- Two channels for voice and fax allowing simultaneous phone and fax or two simultaneous phone conversations
- One channel for global cockpit data (AFIS/ACARS)
- One SwiftBroadband channel for simultaneous data and low cost voice
- One Swift64 channel for back-up data and voice
- Ready for the future "free flight" environment known as CNS/ATM
- ARINC 741/781 antenna compatibility
- Supports all current standards for secure voice and data transmission (FNBDT, STE, STU)
- VoIP connectivity
- High speed internet
- Low cost voice
- Built-in router for intelligent connectivity support and multiple user support
- Built-in Ethernet switch for supporting numerous wired laptops and/or PDAs
- Built-in wireless LAN for supporting numerous wireless laptops and/or PDAs (this function can be disabled)
- Built-in PBX for supporting numerous handsets
- ISDN connectivity

Light in weight, not in possibilities

Installing communications equipment in a jet plane often means giving up on other options. Not so with the Aero-SB+, which is no more than 8 MCU altogether. It is thus perfect to replace older and heavier systems, thus freeing up space for additional payload or fuel savings. Despite its small footprint the Aero-SB+ is a no-compromise solution for the demanding business jet user giving access to:

- Data rates up to 432 kbps
- Always on – low cost data
- High quality, low cost voice
- Built-in router
- Compact and lightweight design
- Wireless functionality

Inmarsat aeronautical satellite communications services

Inmarsat is a global satellite communications system based on geostationary satellites orbiting along the Equator. Inmarsat provides fast and reliable contact through a worldwide network of Land and Ground Earth Stations, which can be reached from any destination except the extreme North and South Poles.

Aero-H+

Inmarsat's primary aeronautical service offers phone, fax and data services for passenger, administrative and Air Traffic Control communications on board commercial, corporate and general aviation aircraft worldwide. Aero-HSD+ incorporates three Aero-H+ channels: two channels for global voice, and one channel for global packet data (cockpit communications).

SwiftBroadband

As, the successor of Aero HSD+ , the Aero-SB+ (SwiftBroadband) is a lightweight aeronautical broadband solution with wireless capabilities and speeds up to 432 kbps. Featuring cutting edge technologies such as SwiftBroadband Background Data and SwiftBroadband Low Cost Voice channel, the SB+ allows users to access a shared data channel and a compressed high quality voice channel minimizing the cost of voIP - both at the same time. Additionally, the Aero-SB+ offers a streaming IP service for customers who require a fixed bandwidth of 32kbps, 64kbps or 128kbps.

Swift64 (for fallback)

The Inmarsat Swift64 service offers fast data transmission. It provides both the high quality and speed of a full ISDN service and the cost effective flexibility of a full IP service (MPDS). For VIP, corporate and government users, this combination offers unmatched access to modern communications. The Swift64 channels of the Aero-HSD+ works equally well with both. ISDN traffic is charged by the length of time the user remains on-line, whereas MPDS charges are "per megabit".

Intermediate Gain Antenna (IGA)

To comply with installations on smaller aircraft, the Aero-SB+ system can also be used with an IGA antenna. The footprint of an IGA is normally less than one third of that of a high gain antenna (HGA), which is an advantage - or even a necessity - on smaller aircraft. The system with an IGA offers the same capabilities. However, the classic voice channels will be Aero-I and the SwiftBroadband rate will be limited to 332 kbps.

Aero-SB+ Flex Program

Never pay for more than you need. That's the philosophy behind the Thrane & Thrane Flex Program for Aero-SB+. It is a flexible Satcom solution enabling you to start out with a system that matches your current needs perfectly. No less, no more. With the Flex program, you can upgrade freely and easily as or if your needs change.

TT-5035A
Satellite Data Unit (SDU)

Features

- Seamless integration of Aero-H+ and Swift64 services into one unit
- Low weight and power consumption
- Compact 3 MCU size
- No forced cooling required
- Built-in CTU connects up to six (standard or wireless) handsets incl. two 2-wire (R)-11/POTS) interfaces - no converter box required. Features such as intercom, conference calling, call forwarding etc. are all included
- Detachable Configuration Module (CM)
- Built-In Test Equipment (BITE)
- ARINC 429 for IRS, AHRS, ACARS, MCDU, CMU, AFIS, CPDF
- RS-232C port for Portable Data Loader/Configuration Management Terminal (PDL/CMT)
- Ethernet connectivity
- ISDN connectivity
- RS422 connectivity

Characteristics

TT-5035A SDU

Dimensions:	ARINC 404A 3/8 ATR short, 3 MCU.
(L x W x H)	12.62 x 3.56 x 7.56" (320,5 x 90,4 x 193,5 mm)
Mass:	7.7 lbs (3,5 kg)
Power:	28 V DC, 30 W typ. 50 W max. Includes handsets, DLNA, interfaces.
Connectors:	Rear: ARINC 404A Front: SUB-D 15 Female.
Environmental:	Temperature: -25 °C to +55 °C Altitude: MSL to 55.000 ft
DO-160D string:	[(A1)(F1)X]CAB[(S2B2)(SM)] EXXXXXZ[A()B]Z[RR]M[A3E3] XXA

TT-5014A
High Power Amplifier (HPA)

Features

- Small size (3 MCU), low weight and low power consumption
- No external forced cooling required
- Installation outside pressure area

Characteristics

TT-5014A HPA

Dimensions:	ARINC 404A 3/8 ATR short, 3 MCU.
(L x W x H)	12.62 x 3.56 x 7.56" (320,5 x 90,4 x 193,5 mm)
Mass:	11.2 lbs (5,1 kg)
Environmental:	Temperature: -55 °C to +70 °C Altitude: MSL to 55.000 ft
DO160D string:	[(A2)(F2)Z]BBB[SCL]EXXXX XZ[A()B]A[A()B]Z[RR]M[A3E3] XXA
Power:	28 V DC.
Power consumption:	10 - 235 W
Power output:	30 W linear

TT-5040A
SwiftBroadband Unit (SBU)

Features

- IP packet or steaming SwiftBroadband data.
- Ethernet connectivity
- ISDN connectivity
- Bult-in router with six Eternet interfaces
- Built-in wireless access point
- Low weight and power consumption
- Compact 2 MCU size
- No forced cooling required
- Easy integration

Characteristics

TT-5040A SBU

Dimensions:	ARINC 404A 3/8 ATR short, 2 MCU.
(L x W x H)	105.79 x 22.48 x 19.49" (320,5 x 57,1 x 193,5 mm)
Mass:	5,5 lbs (2,5 kg)
Power:	28 V DC, 13 W typ. 23 W max.
Connectors:	Rear: ARINC 404A Front: RJ-45
Environmental:	Temperature: -25°C to +55°C Altitude: MSL to 55.000 ft
DO-160E string:	[A1F1]CAB[S2B2SM] ExxxxxZ[AB]A[RB][ZC][RR] M[A3]33]XXAC

TT-5038A-002 Tx Coupler for SBU

Dimensions:	1 x 24.02 x 7.36"
(L x W x H)	(160,5 x 61 x 28,4 mm) including connectors
Mass:	0.50 lbs (230 g)
Connectors:	3 x N-connectors, Female
Environmental:	Temperature: -25°C to +55°C
Altitude:	55,000 ft
DO-160D string:	[(A1)(F1)X]CBB[SCL]EXXXXX ZXXXZ[RR]M[A3E3]XXA

TT-5038A-003 Rx Power Splitter for SBU

Dimensions:	86.8 x 50.8 x 19.1 mm including connectors (L x W x H)
Mass:	0.32 lbs (146 g)
Connectors:	3 x N-connectors, Female
Environmental:	Temperature: -25°C to +55°C
Altitude:	MSL to 55,000 ft
DO-160D string:	[(A1)(F1)X]CBB[SCL]EXXXXX ZXXXZ[RR]M[A3E3]XXA

TT-5035A-001
Configuration Module (CM)

Features
Located at the rear of the SDU, the Configuration Module (CM) contains detailed information on the satcom installation including:

- ICAO address and Swift64 ID
- Log-on policy (manual or automatic)
- Ground Earth Station (GES) preference table
- Details on coax cable losses
- Antenna configuration
- Handset setup, configuration and ring policy
- Phone directory
- Selection of navigational input for antenna steering
- PIN code activation/deactivation

The above parameters may be accessed using any one of the 4-wire handsets or a laptop/PC connected to the RS-232 port on the SDU and running the Aero-HSD+ Configuration Program (HSD+CP).
The CM may be removed/ inserted for easy SDU/HSU exchange - ensuring quick turn around and less time on the ground.

Characteristics
TT-5035A-001 CM

Dimensions:	1.79 x 1.8 x 0.79"
(L x W x H)	(45,5 x 47 x 20 mm)
Mass:	0.15 lb (70 g)

TT-5040A-001
Configuration Module (CM)

Features
Configuration parameters for the SBU are stored in the SBU Configuration Module.
The configuration module is located at the rear of the SBU, which also contains the SIM card for accessing the SwiftBroadband service.
The built-in web interface of the SBU configuration module is used for configuration of the SBU and for accessing the local phone book, call log etc.
The above parameters may be accessed using a laptop/PC connected to the RJ45 port on the front of the SBU.
The CM may be removed/ inserted for easy SBU exchange – ensuring quick turn around and less time on the ground.

Characteristics
TT-5040A-001 CM

Dimensions:	1.79 x 1.8 x 0.79"
(L x W x H)	(45,5 x 47 x 20 mm)
Mass:	0.15 lb (70 g)

TT-5620A/TT-5622A
Full-Feature Handset and Cradle

Features
- Handset with 2 x 12 character backlit LCD for configuration and system status
- Cradle with RJ-11/POTS socket for direct connection to fax, PC modem etc.
- 4-wire and RS-485 interface
- 28 V DC/0.15 A from SDU
- Speaker for hands-free operation
- Available in black or white

Characteristics
TT-5620A Handset

Dimensions:	78.74 x 20.47 x 18.70"
(L x W x H)	(200 x 52 x 47,5 mm)
Mass:	0.68 lbs (310 g)

TT-5622A cradle

Dimensions:	63.19 x 24.02 x 7.36"
(L x W x H)	(160,5 x 61 x 28,4 mm)
Mass:	0.60 lbs (270 g)
DO-16CC string:	A1-BA[MNB]XXXXXXAXXXB [UR]ZXXE3XX

TT-5621B/TT-5622B
Aux. Handset and Cradle

Features
- Auxiliary handset and cradle
- 600Ω ETSI TBR 21 interface
- Adjustable ringer
- 10 memory locations (speed dial)
- Stand-alone use (i.e. no cradle)
- Available in black or white

Characteristics
TT-562□B Handset

Dimensions:	78.74 x 20.47 x 18.70"
(L x W x H)	(200 x 52 x 47,5 mm)
Mass:	0.49 lbs (220 g)

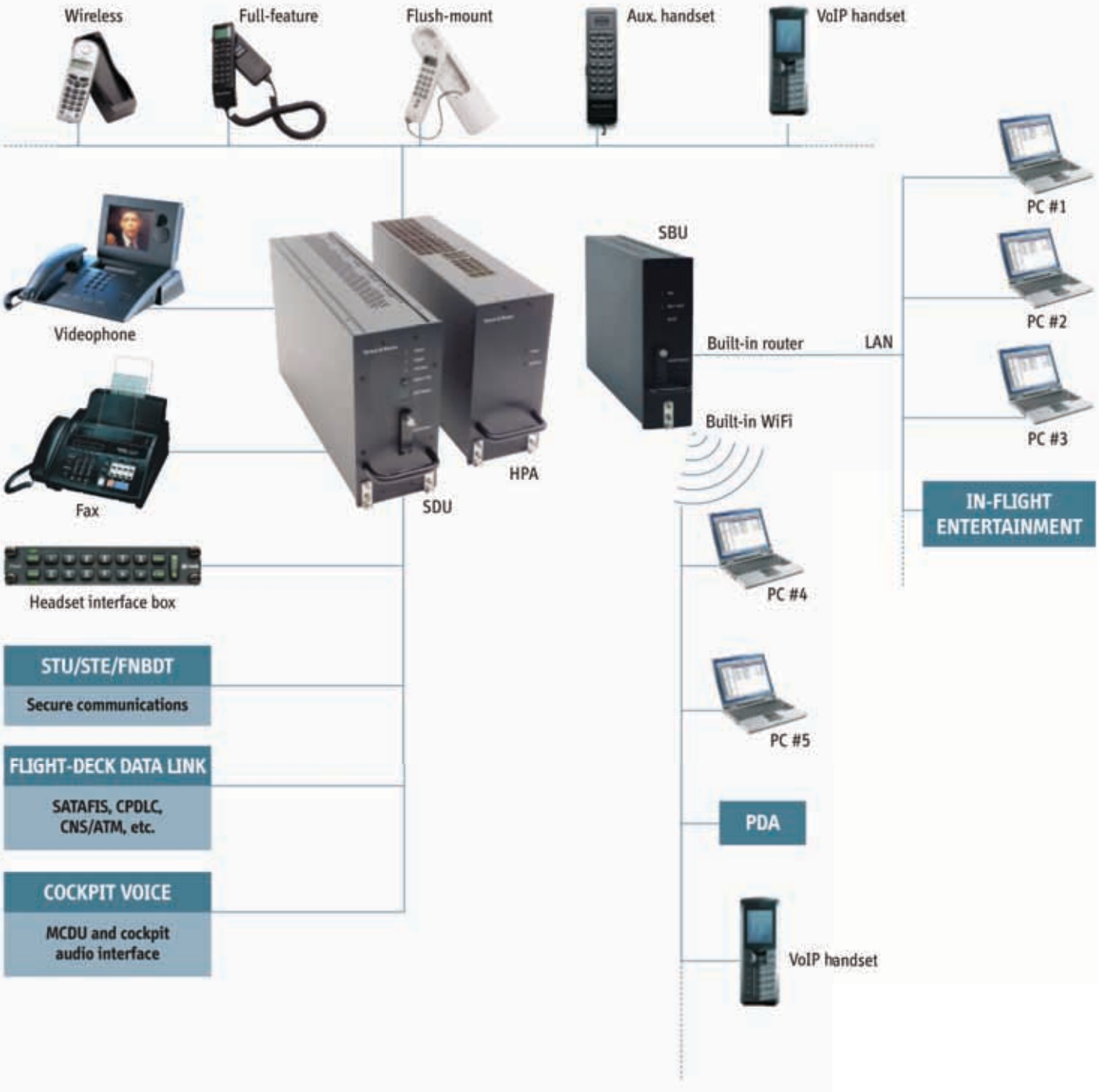
TT-5622B Cradle

Dimensions:	63.19 x 24.02 x 7.36"
(L x W x H)	(160,5 x 61 x 28,4 mm)
Mass:	0.43 lbs (200 g)
DO-16CD string:	[A1X]CAB[(SMB2)(SM)(UFF1)] XXXXXXAXXXB[RRR]M[A2E3] XXA

The Aero-SB+ system has many interfaces and possibilities

The Satellite Data Unit has a built-in cabin telephone unit allowing you to connect up to six handsets (standard or wireless), incl. two 2-wire connections for connecting fax machines, headset interface boxes etc. Ethernet, ISDN and Serial Interfaces secure easy connections directly to laptop PC's or a router/server. The SBU has a built-in wireless access point for easy connection of laptop, PDA or VoIP handsets.

The detachable configuration modules contain all settings making it very easy to replace the satellite data unit (SDU) or SwiftBroadband Unit (SBU). ARINC 741/781 compatibility ensures a straightforward interface to all current high gain antennas.



THRANE & THRANE – THE BROADBAND EXPERTS

Established in 1981, Thrane & Thrane is the world's leading manufacturer of terminals and land earth stations for global mobile satellite communications and has delivered close to 400,000 terminals to the land mobile, maritime and aeronautical markets.

After spending 225 man years in BGAN terminal development, Thrane & Thrane possess the key technology that will be reused in the aeronautical, maritime and land mobile segments.

Having delivered the ground infrastructure (the Radio Access Network) for the I-4 satellites to run Inmarsat's BGAN land mobile services, Thrane & Thrane has won the contract to further develop the ground infrastructure for future aeronautical, maritime and land mobile services.

Following the acquisition of NERA SatCom AS, Thrane & Thrane today provides the entire ground infrastructure for all aeronautical services, such as the classic aeronautical services (H, H+, I and M) as well as the Swift64 and SwiftBroadband services.

We truly are the only aeronautical supplier to deliver both the aeronautical terminals and the ground infrastructure they operate on!

inmarsat

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