

Date: Sep. 04, 2018

Federal Aviation Administration
Office of Spectrum Policy and Management
ASR-1
800 Independence Avenue, SW
Washington D.C 20591
USA

**Reference: FAA Notification of FCC Equipment under FCC Part 87
Aviator 700/700D, Aeronautical Earth Station
Satellite Communication Transceivers.
FCC ID: ROJ-AVIATOR700 (Pending)**

APPLICANT: Thrane & Thane A/S Trading as Cobham SATCOM

Dear Sir,

In accordance with Federal Communications Commission (FCC) Rules and Regulations, Part 87.147(d), Thrane & Thane A/S Trading as Cobham SATCOM hereby notifies the Federal Aviation Administration of its filing with the FCC of an application for certification of the 5035A/5035A-THD Satellite Data Unit (SDU), the 5014A/5014A-THD High Power Amplifier (HPA), the 5040A/5040A-THD (Satellite BGAN Unit (SBU) and the 405013A (Type F DLNA).
All above units are used in the AVIATOR 700/700D system.

Please find below the information required pursuant to Part 87.147(d)(1).

1) Description of Equipment:

The 5035A/5035A-THD Satellite Data Unit (SDU), the 5014A/5014A-THD High Power Amplifier (HPA), the 5040A/5040A-THD Satellite BGAN Unit (SBU) and the 405013A Type F Diplexer and Low Noise Amplifier (DLNA) supports the Swiftbroadband aeronautical satellite communications service. The transceiver meets the applicable requirement of RTCA/DO-210D "Minimum Operational Performance Standard for Geosynchronous Orbit Aeronautical Mobile Satellite Services (AMSS) Avionics".

The AVIATOR 700/700D system are comprised of four units: The 5035A/5035A-THD Satellite Data Unit (SDU)), the 5014A/5014A-THD High Power Amplifier (HPA), the 5040A/5040A-THD Satellite BGAN Unit (SBU) and the 405013A Type F Diplexer and Low Noise Amplifier (DLNA).

The 5040A/5040A-THD (SBU) & The 5035A/5035A-THD (SDU) supports Inmarsat SwiftBroadband signals using BPSK, QPSK and 16QAM. The SDU/SBU signals are combined and amplified for transmission by the 5014A/5014A-THD (HPA).

The AVIATOR 700/700D is a unique multi-channel solution. It combines global voice, fax and data capabilities of the Inmarsat Classic Aero, SwiftBroadband and Swift64 service.

The AVIATOR 700/700D system provides one baseband communication channel capable of supporting simultaneous full-duplex of SwiftBroadband functionality. The System functions in the 1525 – 1559MHz receive band and 1626.5 – 1660.5MHz transmit band.

The Aviator 700/700D System is a mounted Aeronautical Communication System supporting simultaneous voice and data communication through Inmarsat BGAN satellite service. The standard system components consist of the following items:

- SDU (Satellite Data Unit) TT-5035A or TT-5035A-THD
- HPA (High Power Amplifier) TT-5014A or TT-5014A-THD
- SBU (Satellite Broadband Unit) TT-5040A or TT5040A-THD
- Type-F DLNA (Diplexer and Low Noise Amplifier) TT-5013A
- HGA (High Gain Antenna) e.g. TT-5007A-THR
- RF-Splitter TT-5038A-003
- RF-Coupler TT-5038A-004

The interconnection between the transceiver and other sub-systems illustrated in Figure 1:

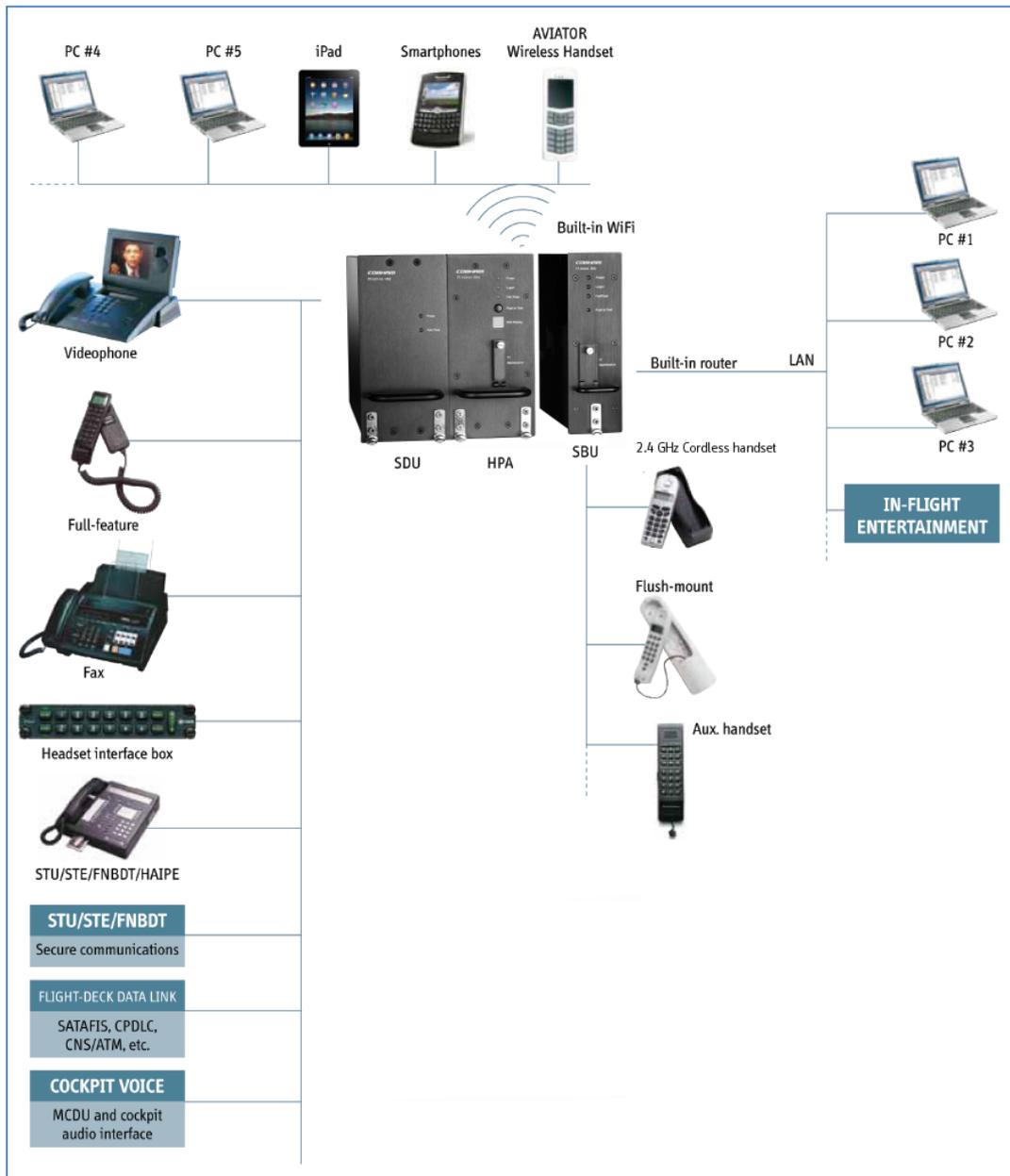


Figure 1: Aviator 700/700D system

2) Manufacturer's Identification

The Thrane & Thane A/S Trading as Cobham SATCOM model identification and the FCC Identifier for the AVIATOR 700/700D are presented in Table 1. For reference, the supported Inmarsat services are included.

Equipment Identification		
Model	FCC ID (Pending)	IC ID (Canadian)
Aviator 700/700D	ROJ-AVIATOR700	6200B-AVIATOR700

Table 1: Manufacturer's Identification

a. Aviator700/700D Inmarsat Services

Services	I4 satellite	I3 satellite	Inmarsat service
Voice service	√	√	Classic Aero (H ⁺)
2.4 kbps modem/fax	√	√	
Low speed data (600 or 1200 bps) for CMU, AFIS and ACARS	√	√	
IP background service (up to 432 kbps)	√		Swift Broad-band (SBB)
IP streaming service (8/16/32/64/128 kbps/X-Stream)	√		
Standard voice (AMBE call)	√		
ISDN UDI 64 kbps	√		
ISDN RDI 56 kbps	√		
High quality audio service (3.1 kHz (14.4 kbps) for modems, G3 fax etc.)	√		
High-quality voice	√		
Built-in router option with DHCP and Network Address Translation (NAT)	√		
Built-in wireless option	√		
IP/MPDS background service (up to 64 kbps)		√	
ISDN UDI 64 kbps		√	
ISDN RDI ¹ 56 kbps		√	
High quality audio service (3.1 kHz (14.4 kbps) for modems, G3 fax etc.)		√	
High-quality voice (speech)		√	

Table 2: Aviator 700/700D Inmarsat Services

3) Antenna Characteristics

AVIATOR 700/700D equipment is designed to operate with Inmarsat approved Satcom aeronautical antenna systems.

These antennas meet the requirements of ARINC Characteristics 741 and/or ARINC Characteristics 781, and RTCA/DO-210

4) Rated Output Power (EIRP)

Type	RF Power EIRP [dBW]
Aviator 700/700D	20.0dBW +2.0 /-3.5dB

5) Emission Types and Characteristics

The AVIATOR 700/700D equipment emission types and characteristics are summarized in Table 3.

Inmarsat Service	Data Rate (kbps)	Symbol Rate ksym/s	Modulation Type	Signal States (S)	Necessary Bandwidth (kHz)	FCC Designator
Classic R/T	0.6	0.6	Pi/2 BPSK	2	0.84	840HG1D
Classic R/T	1.2	1.2	Pi/2 BPSK	2	1.68	1K68G1D
Classic C	8.4	4.2	Aviation QPSK	4	6.80	6K80G1E
Swift64: TDM Signaling	3	3	BPSK	2	21.0	21K0G1D
Swift64: Mini M AMBE Voice	5.6	2.8	Offset QPSK	4	7.20	7K20G1E
Swift64	134.4	33.6	16 QAM	16	40.0	40K0G1E
Swift64 MPDS	134.4	33.6	16 QAM	16	40.0	40K0G1D
SwiftBroadband	33.6	16.8	QPSK	4	25.0	25K0G7W
SwiftBroadband	67.2	33.6	QPSK	4	50.0	50K0G7W
SwiftBroadband	134.4	67.2	QPSK	4	100	100K0G7W
SwiftBroadband	302.4	151.2	QPSK	4	200	200K0G7W
SwiftBroadband	134.4	33.6	16 QAM	16	50.0	50K0D7W
SwiftBroadband	268.8	67.2	16 QAM	16	100	100K0D7W
SwiftBroadband	604.8	151.2	16 QAM	16	200	200K0D7W

Table 3: Emission Types and Characteristics

6) Frequencies of Operation

1525 to 1559 MHz receiving

1626.5 to 1660.5 MHz transmitting

7) Receiver Characteristics

The receiving characteristics of the AVIATOR 700/700D equipment meet the applicable requirements of the Inmarsat System Definition Manuals (SDMs) and RTCA/DO-210.

If this information meets with your approval, Thrane & Thane A/S Trading as Cobham SATCOM herein requests that your office notify the FCC's Office of Engineering and Technology Laboratory, Authorization and Evaluation Division, in order to indicate that, pursuant to Section 87.147(d)(2) of the FCC's rules, the FAA does not have an objection to the certification of the equipment described in this letter.

If you have any questions on the above information, please feel free to contact me directly.

Sincerely,



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