

GSMConneX™

GSM for Business Aircraft

GSMConneX™ is an end-to-end solution that provides GSM services to aircraft passengers and crew. It consists of hardware and software parts for both the aircraft and the ground, with the airborne GSM network being connected ground network via satellite, or any other backhaul link.



GSMConneX™ Main Features:

The entire airborne hardware is contained in two Line Replaceable Units (LRUs), consisting of:

- **BTS+**, an integrated GSM Base Transceiver Station with controller, Ethernet switch and aircraft interface unit
- **NCU**, a radio Network Control Unit
Optionally, Internet access through WLAN is supported

GSMConneX™ Technical Information

Hardware

- BTS+ including controller, A/C interface unit and Ethernet switch
- NCU for GSM radio control according to ECC regulation / ED-130
- Optional WLAN access point for Internet access

Functions

- BTS management (power, frequencies)
- Radio management (ED-130, ECC compliant)
- SDU interface (SwiftBroadband, others)
- QoS Quality of Service management
- Network management
- Crew GUI / control
- (optional) WLAN portal including payment portal

GSMConneX™ Summary:

- Voice, SMS, GPRS and EDGE data
- Comprehensive crew control
- Automatic system control using position and height, to ensure compliance with all regulations and authorisations
- Advanced operational and management concept
- Multiple satellite systems are supported including:
 - Inmarsat BGAN SwiftBroadband
 - DVB-S2/RCS
 - VSAT (Ku-band)
- Other links, for example direct air-to-ground, are also supported

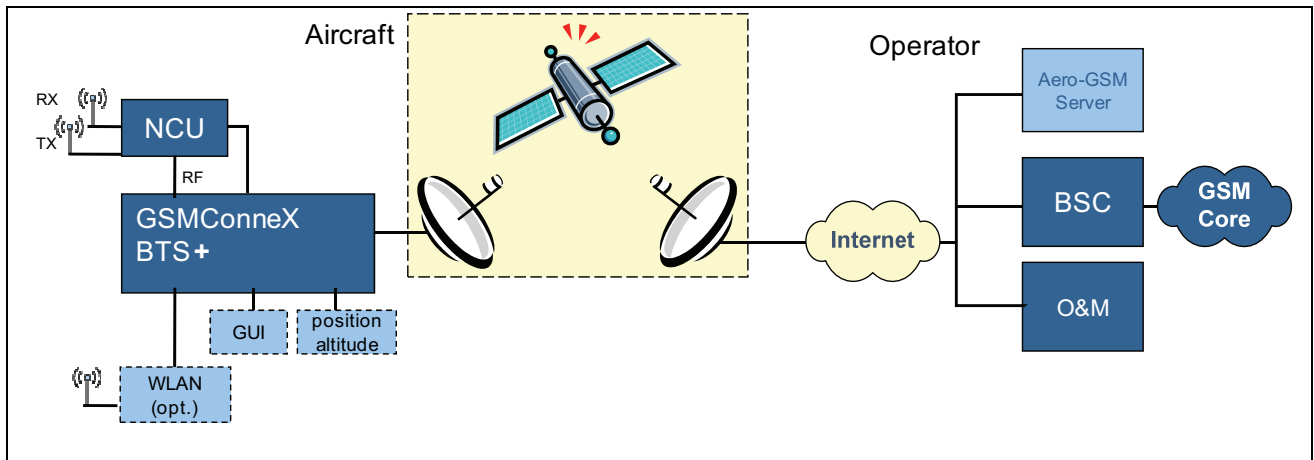
Highly efficient use of available bandwidth

GSMConneX™ only activates the satellite link to send and receive data, meaning there is the minimum of redundant satellite time used.

In addition, GSMConneX™ uses VoCeM, the most advanced header compression, multiplexing and signaling suppression techniques.

This means the service provides compression gains of up to 500% over the satellite link providing very low bit rates, therefore minimizing costs.

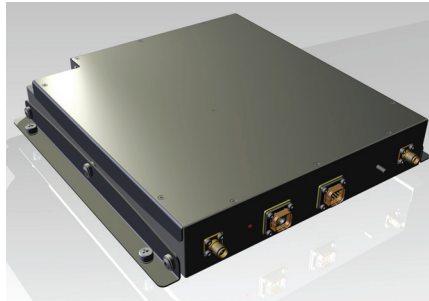
GSMConneX™ System Architecture



The BTS+ GSM Base Transmitter Station and Controller is connected via satellite to a GSM operator.

The GSMConneX™ system adds local software control and backhauling functions to enable the use of GSM in aircraft cabins. Radio signals are controlled and transmitted through a Network Control Unit (NCU) with antennas. An aircraft installation of GSMConneX™ requires only two LRUs, NCU and BTS+, and minimizes wiring.

BTS+



- GSM BTS with Integrated Controller/Server
- 4-port Ethernet Switch
- Arinc 429 TX/RX
- Discretes

Integrated software functions:

- GSMConneX™ software modules
- Cabin router (opt.)
- WLAN portal (opt.)
- Payment portal (opt.)

nanoBTS:

- GSM 1800: Voice, SMS, GPRS, EDGE
- Dimensions: 300 x 330 x 60 mm
- Weight: 4 kg
- Power: 28 VDC
- Power Consumption (max.): 40 W
- Qualification: DO160E
- Temperature operating: -5°C to +55°C
survival: -55°C to +85°C
- Cooling by conduction to the mounting plate

NCU



- Dimensions: 310 x 320 x 80 mm
- Weight: 10 kg
- Power: 28 VDC
- Power Consumption (max.): 75 W
- Qualification: DO160E
- Temperature operating: -40°C to +55°C
Survival: -55°C to +85°C
- Cooling via cooling fins (passive convection)

Controlled systems according to ECC/DEC/(06)07:

- GSM 450: 460-470 MHz
- GSM 800/900: 869-894 MHz / 921-960 MHz
- DCS 1800: 1805-1880 MHz
- PCS 1900: 1930-1990 MHz
- UMTS-FDD: 2110-2170 MHz
- UMTS 2600: 2620-2690 MHz