

CARDINAL G58

BARON G58 SAT PHONE MONITORING



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Cardinal G58 offers a technological breakthrough in the world of Airborne Satellite Monitoring Systems (ASMS), merging world leaders best equipments. Cardinal offers a proven SIGINT solution mounted on reputable 6 seaters aircraft, only for governments and government-authorized Agencies.

The aircraft, the Baron G58 is a is a light, twin-engined piston aircraft developed by Beechcraft. Beechcraft has built more than 54,000 aircraft and more than 36,000 continue flying today. It leads the industry with a global network of more than 90 factory-owned and authorized service centers. The company's headquarters and major manufacturing facilities are located in USA.

Satellite monitoring called FlyingFish™, is developed by Horizon Technologies, the world leader in airborne satellite (SAT) monitoring systems for ISR applications. FlyingFish™ is designed to passively and simultaneously monitor Thuraya, and IsatPhone Pro networks. The system will detect and intercept terminal and call activity within radio line-of-sight including: voice, fax, data and SMS where available.



Basic configuration

Features

- ① Up to 6 Passengers seating and can be configured to your specifications
- ② Powerful twin Continental engines allows to climb at 520 meters per minute
- ③ Large AFT loading doors
- ④ Front baggage compartment, optimize space and safety and can stow until 150 kg
- ⑤ LED lighting provides better visibility, less drag and reduced maintenance

CARDINAL G58

BARON G58 SAT PHONE MONITORING

The Baron G58 comes with spacious seating for six with hand-stitched detailing, providing complete comfort for its passengers. Seats are reconfigurable to suit any mission, and large windows allow for ample nature lighting and a scenic view. Set-and-forget air conditioning maintains perfect temperature for the duration of the trip, so all passengers always keep perfect working conditions.

Black



Saddle



Gray



Beige



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BARON G58 SAT PHONE MONITORING

The Baron G58 is powered by the latest technology in integrated cockpit avionics, the Garmin G1000 NXI. With an improved graphical interface, more powerful hardware, higher resolution displays, added functionality to improve situational awareness and optional wireless technology, managing the flight deck has never been easier.



Wireless Database and Flight Plan loading



Enhanced HSI Functionality



Vertical Situation Display



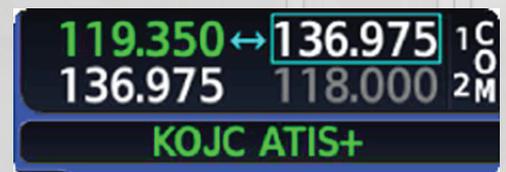
VFR Sectionals



IFR High and Low Charts



Vertical Situation Display



COM Frequency Decoding

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BARON G58 SAT PHONE MONITORING

The G1000 NXi system incorporates modern processing power that supports faster map rendering and smoother panning throughout the displays. Saving valuable time in the cockpit, the displays initialize within seconds after start-up, providing immediate access to frequencies, flight plan data and more. The G1000 NXi system also incorporates contemporary animations, modernized design for improved readability and new LED back-lighting, offering increased display brightness and clarity, reduced power consumption, as well as improved dimming performance.

Visual approaches integrated within the G1000 NXi system offer pilots safety-enhancing guidance during visual flight conditions based on a three-degree glideslope from the threshold of the runway. Pilots can select the runway for which they have been cleared to land, set customized minimums, select vectors or straight-in for the final approach intercept and fly a visual approach coupled with the autopilot. By utilizing visual approaches within the G1000 NXi, pilots are provided a more stable and precise flight path throughout the approach and landing phases of flight in visual conditions.

Features and Options :

- Standard ADS-B Out and In
- Optional wireless database and flight plan loading
- Integrated VFR sectional charts
- IFR High and Low charts with night mode
- Enhanced HSI features
- COM frequency decoding
- Vertical situation display
- Selectable visual approaches
- Optional surface watch for runway safety
- Enhanced graphic and faster processing
- Improved joystick with smoother panning
- Simplified maintenance



CARDINAL G58

BARON G58 SAT PHONE MONITORING

DIMENSIONS :

Wingspan : 11.53m
Length : 9.09m
Height : 2.97m

WEIGHTS :

Max Takeoff Weight : 2,495 kg
Empty Weight : 1,801 kg
Useful Load : 705 kg

PERFORMANCE

Takeoff Ground Roll : 418m
Max Climb Rate : 518 mpm
Max Cruise Speed : 374km/h
Max Range : 2,741 km
Service Ceiling : 6,306 m

ENGINES :

Continental IO-550-C : 300 hp each

*Performance data is based on standard conditions with zero wind. Field performance assumes a level, hard surface, dry runway. Range is based on a ferry mission with 1 pilot at LRC with 45 minute reserve.



CARDINAL G58

BARON G58 SAT PHONE MONITORING

The Baron G58 is equipped with a FLIR Star SAFIRE 230-HD electro-optical/infrared (EO/IR). This camera system demonstrates the Intelligence, Surveillance and Reconnaissance (ISR) capabilities.

BENEFITS

- Up to seven **SIMULTANEOUS** payloads in a 9" package: IR, color HD, EMCCD, laser pointer, laser illuminator, LRF, IMU
- High definition 1920 x 1080 color CCD provides the highest level of detail and crisp, clear imagery
- 640 x 480 Infrared and matched low light, electron multiplied CCD cameras deliver crisp, detailed images in all lighting conditions
- Embedded, self-contained capability that provides geo-location and geo-pointing for improved tactical coordination and ease of system control
- Laser pointer covertly pinpoints targets for observers using night vision equipment; laser illuminator maximizes EMCCD performance in extreme low light conditions
- Advanced capability that tracks targets or scenes with all imagers (IR, color, EMCCD)
- Outstanding gimballed stability maximizes EO and IR sensor range performance
- Star SAFIRE 230-HD outputs SMPTE 292M and DVI digital video for all channels, maximizing resolution and range performance
- Provides standardized wiring to all HD turrets in this family; and to external systems, making this family of systems completely interchangeable and interoperable
- Proven quality, reliability and performance in the most demanding military environments



CARDINAL G58

BARON G58 SAT PHONE MONITORING

The FlyingFish™ main advantage as an airborne system is increased interception ranges up to 400 km or 250 nm (altitude and environment dependent) of the satellite terminal uplink due to better line of sight. FlyingFish™ can also be used for vehicular and shipborne applications.

The 3rd Generation FlyingFish™ is able to SIMULTANEOUSLY monitor Thuraya and IsatPhone Pro SAT phones. The system is capable of monitoring a total of 64 duplex channels, 32 Thuraya channels and 32 IsatphonePro mode channels.

The system also incorporates an optional integrated AIS/GPS receiver for maritime applications. This is especially valuable for correlating AIS tracks with Sat Phone calls at sea. The receiver will be able to process AIS message formats defined within the internationally accepted standards for AIS equipment. Our AIS receiver utilizes a software-defined radio architecture supporting four (4) AIS receivers tunable over the marine VHF band (156-163 MHz).

The system now has a full remote control option via datalink/ethernet. Due to the powerful embedded processor in FlyingFish™, users are now able to run their own tactical mission software on FlyingFish™, and no longer need a separate LRU.



SIMULTANEOUS and PASSIVE Monitoring of:

- Thuraya
- IsatPhone Pro
- L-Band Uplink and Downlink Signals
- Integrated AIS/GPS Receiver for Maritime Operations
- Integrated Airborne LNA/Filter Set

FlyingFish™ SD is Horizon Technologies' 3rd Generation Airborne Satellite Monitoring System (ASMS). It enables governments to passively monitor satellite communications from airborne ISR platforms. FlyingFish™ is a UK Commercial Off The Shelf (COTS) product, and is non-ITAR.

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SYSTEM OVERVIEW MODES OF OPERATION :

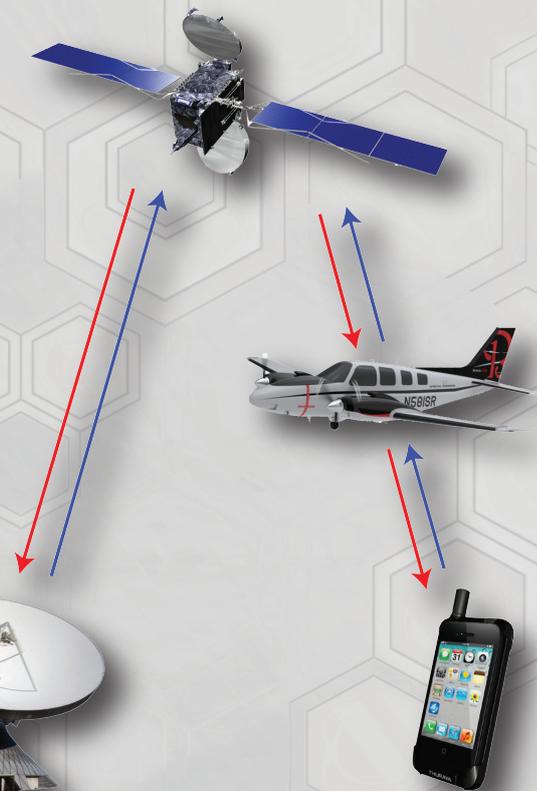
Used to passively monitor communications on the Thuraya, or IsatPhone Pro networks, FlyingFish™ is completely passive and cannot be detected by either the mobile user or the satellite network, making it ideal for covert operations.

THURAYA MONITORING :

For every event monitored on a Thuraya terminal, the GPS position of the originating terminal is recorded and its position can be displayed on an interactive map within the Graphical User Interface (GUI). This mapping functionality is based on the industry standard ArcGIS software produced by ESRI. Maps with finer detail and even satellite images can be incorporated into the interface. In addition to intercepting content from the L-band downlink side of the call, FlyingFish™ is also able to extract the channel assignment for the matching uplink side of the call to intercept both sides of the duplex call in full.

ISAT PHONE PRO MONITORING :

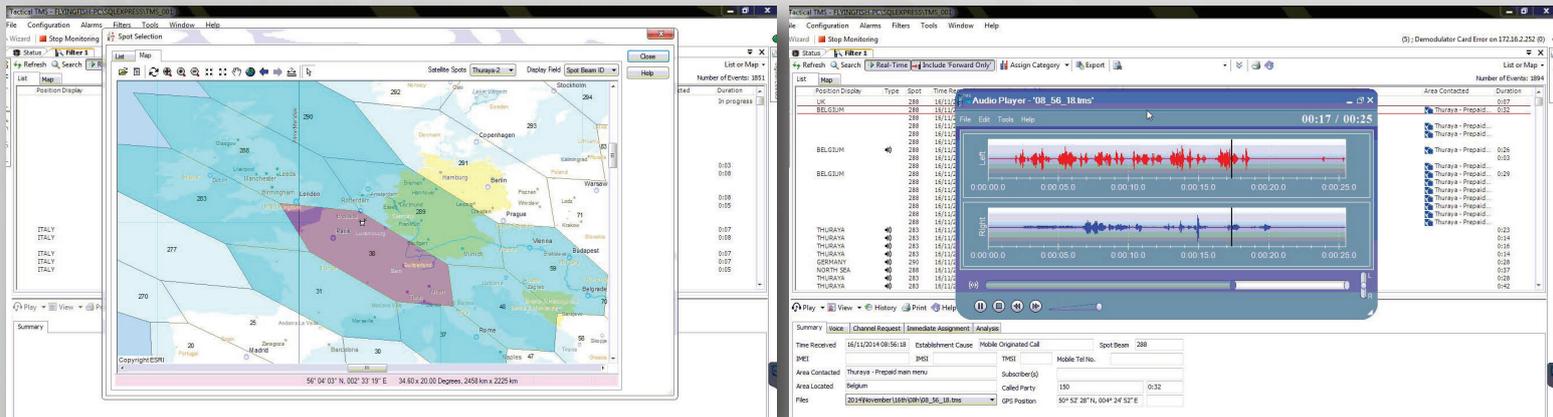
In this system, a GPS signal is transmitted within the encrypted part of the call by the handset. Thus, a third-party decryption unit is required to obtain content of the call and GPS position. The rest of the monitoring capability remains the same, with interception of both sides of the duplex call. FlyingFish™ can be used to intercept and monitor terminals using the original ACeS Garuda satellite service, or the Inmarsat IsatPhone Pro service being operated through recently updated service for the Inmarsat's I-4 EMEA or Asia-Pacific satellites. Recently (2014) migrated from the 4F2 to the Alphasat satellite.



FlyingFish™ system Architecture

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FlyingFish™ Tactical TMS Interface

SYSTEM CAPABILITY :

- Analyzes Thuraya, IsatPhone Pro traffic simultaneously
- 64 Duplex Channels, 32 Thuraya, 32 IsatPro
- Single sealed unit with internal cooling
- Software control of all Front Panel functions
- DC Input: 10V - 36V
- Omni-directional interception
- All software protected by licensed dongle
- Remote control optional
- System Erase function
- No shock mounting required

SYSTEM COMPONENTS :

- FlyingFish™ unit including
- Downlink antenna (1524 - 1560 MHz)
 - Target antenna (1626.5 - 1660 MHz)
 - Thuraya: LHCP/Inmarsat/IsatPhone Pro: RHCP



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AIRBORNE CONFIGURATION INCLUDES :

- FlyingFish™ unit including
- 1x Dual Integrated Downlink Filter/LNA
 - 1x Dual Integrated Uplink Filter/LNA
 - 2x Dual mode Antenna (Optional)
 - Mouse, keyboard, set of cables, and connectors
 - Ruggedized display with USB Hub

FLYINGFISH™ DIMENSIONS :

Width 392mm / Depth 371mm / Height 240mm

Weight: 16Kg

POWER REQUIREMENTS :

AC PSU EXTERNAL: 90V-264VAC, 47/63Hz O/P 700W at 28V

DC PSU INTERNAL: 28V, 350W, MIL STD 461F

Section 16 (Voltage Spike)

MIL STD 461 Section 21.5 (Emission)

Environmental standards:

Mil-Std-461F (EMC)

DO-160G (Vibration)

Altitude: 30,000 ft.

Operating Temperature: -20C +50C

Storage: -55C – 85C

Color: 60% Matte Black

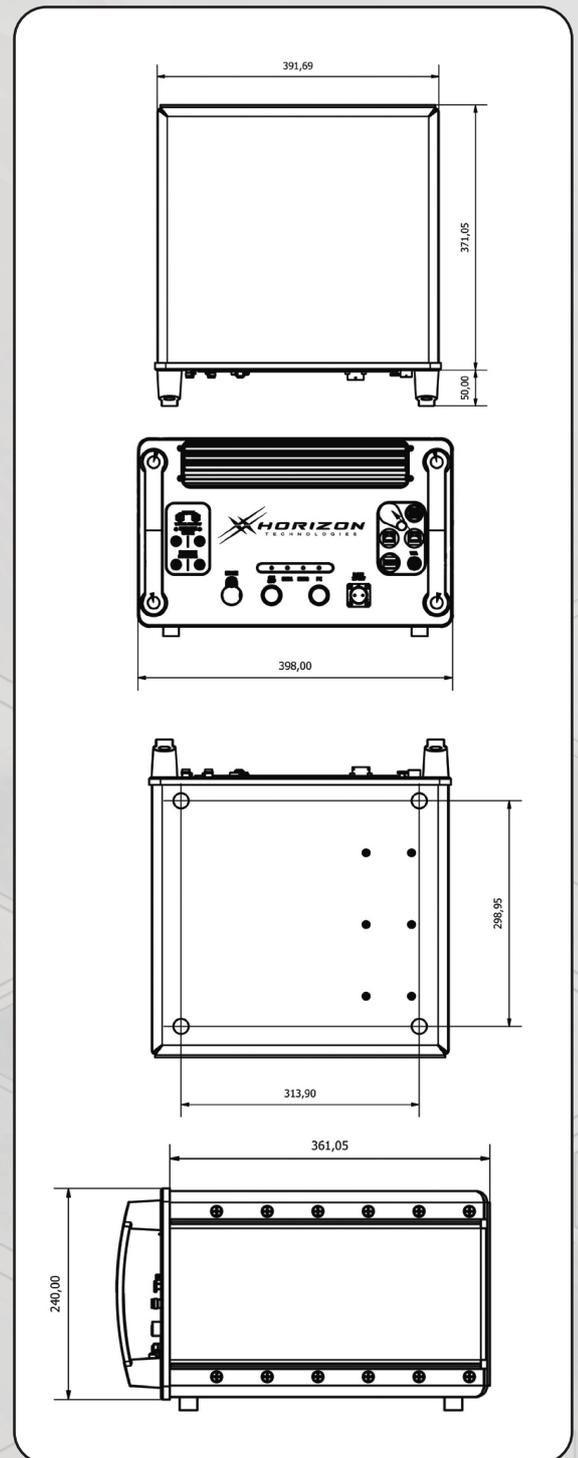
Mounting: 4 x M5 mounting holes

Interfaces: Comms port, 2 x Ethernet, System connection

(4 x USB, HDMI and VGA)

NOTE: FlyingFish™ is subject to EU Dual-Use export control under section 5A001.f of the EU Dual-Use control list. An export license is required for shipment outside the EU.

All specifications subject to change without notice.



CARDINAL G58

BARON G58 SAT PHONE MONITORING

The Cardinal G58 comes with AIMS-HD Mission software developed by CarteNav Solutions. AIMS-HD is market leading mission system software that enhances situational awareness and improves mission effectiveness on airborne, land-based and maritime platforms. The software processes live video and data from cameras and other sensors, then geo-references and displays that data in real time.



FEATURES :

Intuitive User Interface :

- Customisable for touchscreens, work stations and multipledisplay installs.
- Available in different languages.
- Individual operator profiles can be saved and recalled.
- Comprehensive Camera Integration
- Camera can be cued and locked to points from the map or the live video.
- Manually steer, focus, zoom and control the camera.
- Multi-step camera functions engaged in a single touch.

Accurate GEO Features :

- Camera boresight and footprint is terrain corrected.
- Display of platform and footprint coverage history.
- Perimeter mapping tool including area calculation.
- Tactical Vision (Augmented Reality)
- Tactical data overlaid onto live video including street vectors, addresses, POIs, ref-marks and shapes.
- In-video measurement tool.

Smart Search :

- Rapid search of street addresses and POIs including drill down feature.
- Controllable search parameters.
- Single touch slew-to and ref-marking of results.

Report Generation :

- Report containing a still image and its associated metadata (including time, date, boresight and platform location) can be quickly created.

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BARON G58 SAT PHONE MONITORING

Single Touch Stills Capture :

- Capture geo-referenced still imagery from live video.
- Images can be annotated and compressed.

Alerts and Filters :

- Visual and audible alerts can be triggered on platform position and track data.
- Track data can be filtered ensuring the operator's display remains uncluttered.

Navigation Aids :

- Bearing, Distance To Target, Estimated Elapsed Time and Estimated Time of Arrival to a given nav-to marker.

Networked :

- Installs can be easily networked together, allowing data to be shared between all operators whether they are on the platform or located remotely (e.g. on the ground).

STANAG 4609 Compliant :

- Integrated recording, playback, and display of STANAG 4609-compliant video with event marker features.

Mission Planning :

- Install tasking, waypoints, alerts, map updates and routes.
- Create target decks for each task containing text and imagery.
- Upload and amend tasking live via a suitable network connection

Mission Record and Replay :

- The whole mission can be replayed with synchronized video and audio with full data export features.

Mapping Available with a range of raster and vector maps supporting Aeronautical Topographical Charts, Nautical Charts, Satellite and Aerial Imagery, House Boundaries, Route Maps and associated DTED. Multiple map layers can be displayed and their opacity set by the operator. Flexible map converter that enables the operator to convert and install their own maps and create new map layers using the auto-snapshot tool.

CARDINAL G58

BARON G58 SAT PHONE MONITORING

Sensor Integration:

- Proven interfaces with cameras, radar, AIS and searchlights from leading manufacturers.
Interface types: RS-422, RS-232, Ethernet

Video Input Formats:

H.264, HD and SD, STANAG 4609 Metadata

Recording Formats:

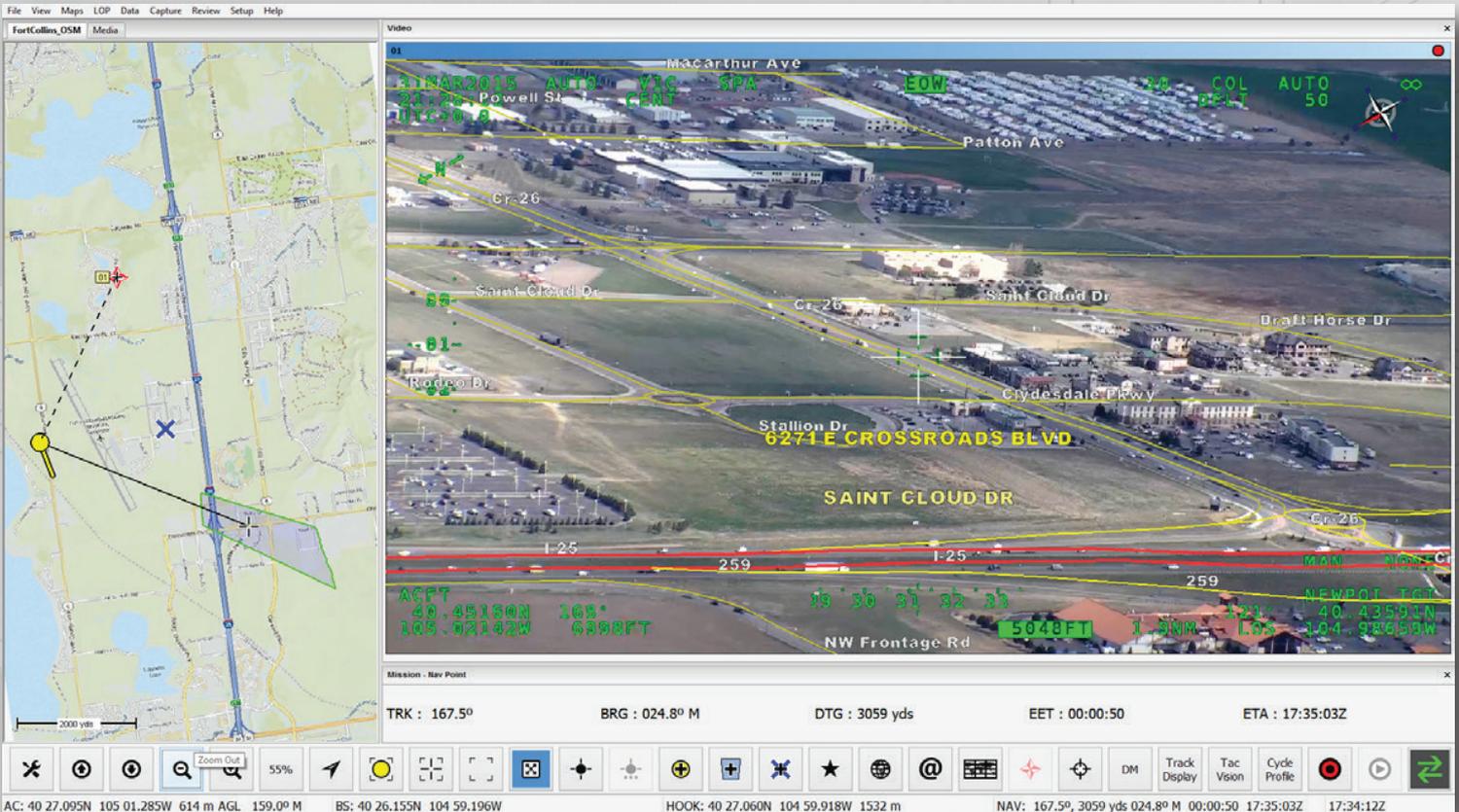
All mission data is stored in Windows® folders

Still Images: NITF, JPEG, BMP, KML

Audio Files: WAV

Export Formats:

SHP, CSV, TXT, JPEG, KML, BMP, PDF, GEOTIFF



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To increase our quality, we reserve the right to make any changes on the model, technical features and equipment and accessories without prior notice