

FORCE ONE

NAVIGATOR



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Main Benefit:

Cost

- Competitive Price
- Low Installation cost
- Low maintenance cost

Single board, all in One

- Simply to service, just one board
- no inter-boards connectors
- Lightweight for easy fitting
- Very compact size just 25 mm

Embedded GPS and GPRS Antennas

- Built-in High sensibility, state of the art active GPS and GPRS antennas.
- Simply to install, the full installation requires just two power wires.
- Simply to service, no needs for antennas hole and cables through the car.
- Simply to replace and/or move from car to car.
- Ready for eventual external antennas in case of very shielded cars.

Embedded Taximeter

- MID, OIML R21, E-MARK approved/certified

ALL in ONE

FORCEONE

NAVIGATOR

EMBEDDED GPRS / GSM ANTENNA



EMBEDDED GPS ANTENNA

FLIP GPS ANTENNA



DUAL CPU

The Primary CPU is 400MHz Samsung and the ARM architecture allows this Device to supply a remarkable flexibility and efficiency in computing power, together with reduced power consumption.

The Secondary CPU AITP (Automotive Intensive Task Processor) supplies the necessary functionalities in the automotive field, like power management, Safe Shutdown, Wheel Pulses Odometer, Distance and Speed calculation, Wake-Up on Ring, Over-the-Air services for software and firmware updates.

The AITP is OTA programmable for remote automatic firmware upgrade, and is always powered ON; it can turn-ON and OFF the Device and all its peripherals.

IDEAL FOR FLEET MANAGEMENT AND JOB DISPATCHING

The Device represents the state-of-the-art device for job dispatching and fleets management, an ALL-IN-ONE powerful and compact solution.

Its modem GPRS allows very reliable communication with operating headquarters. The vehicle can be located through the high performance GPS U-Blox 6 receiver with 50 channels, and compatible with the new European positioning system GALILEO.

Both GPS and GPRS modules can be powered ON and OFF regardless of Windows CE status.

A Hardware MUX Port is available which allows to send AT commands to the modem while the device is connected in GPRS, for example to request connection status, signal diagnostic and modem statistics. All the communication and tracking features are ensured by the AITP processor even when the Device is powered OFF: the GPS and GPRS modules are managed by the AITP both for power supply and for communications.

CUSTOMIZABLE USER INTERFACE

The 4.3 inches 16:9 clear readable TFT Displays with 480x272 resolution allows to develop versatile and high accessible applications, thanks to the integrated TouchScreen controller, and to the 9 keys with integrated LEDs.

The Hardware Keys avoid consumption and damage of the Touch Screen under heavily usage operations.

The ambient light sensor allows to choose an optimal brightness of the display in any environmental light.

The power key is a Smart Power Button, completely programmable and used to perform several important tasks such as:

- normal press to start from System Disk
- long press to start from microSD Card
- long press to Shutdown CE safely

It can also be disabled or programmed to trigger Ghost Mode (fake shutdown).



DOUBLE BOOT FEATURE

Through this powerful functionality is possible to restore and to update the entire system anytime, starting from user application up to the complete operating system and all the CPU firmwares.

The system is able to boot from two different disks:

- Flash Disk, used for applications and data;
- microSD for large data storage (large maps, images, movies, logs) and for service (system initialization or restore).

STEALTH MODE

Stealth mode is a special operating mode in which the system is working but the display is OFF. This feature can be useful in several situations:

- Driver Control: System has also the wake up on ring feature, so at the central it is possible to remotely turn-ON the device (also in stealth mode so nobody can see that it is starting) in order to check vehicle position, internal audio listening and other data.
- Ghost Mode: It is possible to set the device so that after pressing the shut down button the system goes on stealth mode instead of turning OFF. This feature is useful if you want the device to remain always ON (it turns OFF only the display, reducing power consumption) or in an alarm situation.
- Alarm managing: If system is OFF and alarm button is pressed the system can be started in stealth mode, so nobody can see that the system starts. On this special start the system can be programmed for example to send an alarm message to the central, GPS position or also screenshots or audio.

HIGH AVAILABILITY

The Device can withstand glitches at car start, or power loss problems thanks to the external UPS Battery system (option), that is automatically recharged. The AITP processor gives time to user applications and Windows to gracefully and safely close in case of sudden disconnection of the Main Power.

INPUTS AND OUTPUTS

The Device supplies a wide range of communication channels with the external environment: two USB Host, one USB Device and up to 2 Serial Ports (232 o 485). The special programmable digital inputs and outputs allow to control devices and read signals coming from generic external equipments.

Technical Specifications

Display

Viewing area 4.3" diagonal
WQVGA 480x272 Resolution
Colour TFT LED Display with 256,000 Colours
Display clearly viewable with 300 cd/m2
Ambient Light Sensor with 32 Steps Automatic Regulation

Touchscreen

Full Automotive Rugged Touchscreen with configurable touch areas.
Extended Temperature Range
Pencil / Finger Type

CPUs

Primary CPU Samsung ARM 400MHz
Secondary CPU M16 for Automotive Intensive Tasks

Ram Memory

128MB RAM Memory

Storage Memory

128MB capacity of Internal Flash Memory
microSD HC (High Capacity compatible) socket

GPRS Modem

GSM / GPRS Class 10
Modem can be powered on when the terminal is off.
Wake-up on ring programmable features
Warm reset and cold reset (dedicated electronic circuit) available through API calls
2 Hardware RS232 Serial Ports available on the modem (Hardware MUX) allow both RAS and AT command from user applications
2 Sim Card slots with Software switcher available through API calls
Support international standard protocol (ETSI AT command set)
Supports RAS (Remote Access Service) dialup function
GPS / GPRS Rugged Combo antenna (option)

GPS Receiver

Ublox 6 SuperSense Technology and Indoor Navigation, new generation GPS chipsets with improved precision and fast acquisition of position fix on start up and sleep mode
50 Channels, over 2 Million correlators, GALILEO Compatible
Antenna Monitor (Disconnection and Short Circuit Detection / Protection)
- Hot starts: < 1 s
- Warm starts: 29 s
- Cold starts: 29 s
Supports international NMEA standard format and proprietary UBX Binary protocol
Messages interval up to 5 Hz Frequency
Warm reset and cold reset (dedicated electronic circuit) available through API calls
Assisted GPS (A-GPS) available
GPS / GPRS Rugged Combo antenna (option)

USB Ports

2 USB Host (with USB Support for Mouse and Keyboard)
1 USB Device (in case of use the number of Host will be 1)

Hardware Keys

9 Lighted and Software programmable Hardware Buttons

Power on key

1 Power On/Off button

Serial Ports

2 Internal RS232 Serial Ports
8 RS232 Serial Ports Available through External DerivBox (option)
2 RS232 Serial Ports available on embedded meter to connect 2G IU, Printer and Smart Roof sign (Option)

I/O ports connection

5 Power Output Ports
Dedicated Ignition input (Option)

Alarm and Security

Stealth Mode Controller (system ON display, audio and lightings off)

Stealth Display Feature

Fully Programmable Stealth display mode, Screen saver mode and sleeping mode by:
- Power Button
- Hardware Key
- API
Enable Switching Off LCD without powering down MDT unit.

Multimedia

Speaker and Microphone
Supports wave speaker volume control
API to be provided
Playback wave and speech files

Boot

Dual Boot available from Flash Disk and microSDHC Card
Boot Time < 11 sec
Customizable Boot Up Splash Screen with End-User Logo

Soft/Hard Reset

Soft Reset available through HW switch
Soft Reset available by API calls
Hard Reset available by microSDHC Card (Factory default)

Safe Windows shutdown procedure.

Preshutdown notification
Disk Activity Signal Control
External UPS (option)

Operating System

Windows CE .NET 6.0 with ATL, MFC, .NET Compact Framework 3.5 and Digitax Framework 4.1

Development Tools

- ActiveSync 4.5 (last version available) and USB debugging with ActiveSync support
- Sample code for SDK in C++
- Compact Framework 3.5 supported
- Digitax Framework 4.1 (Digitax Libraries): GPS, GPRS, I/O, Odometer, Taximeter, Hardware Keys, WatchDog, OTA, Windows Status, Stealth Mode Controller, Logs, Light Dimmer, Hardware Identification, Splash Screen, Alarm, Printer 3 Card Reader and Windows Status
- Serial port driver and test tools
- Digital I/O driver, API (DLL) and test tool
- Read/Write Windows CE registry application and API to Supports permanent saving of system settings into registry
- Software controllable Warm Restart and test tool
- GPRS modem driver and test tool
- GPS driver and test tool
- Speaker and MIC test tool, wave playback and voice recorder
- Contactless / NFC reader driver and test tool
- Backlight control API and test tools
- Ping tool
- Dialup network
- GSM phone dialer
- Support network protocol TCP/UDP, IP, PPP
- Virtual keypad
- Text file editor
- Explorer

Text-To-Speech

- Support 3rd party Native Text-To-Speech

Software Navigation

- Support 3rd party map application and navigation software with SDK

System diagnostic tools

- On Field Test (OFT) OnBoard Diagnostic Utilities included, with Customizable CheckList to make tests of GPS Fix, GPS Antenna, GPRS Connectivity and Base Station Signal Quality, Odometer, Ignition, Panic Button, TouchScreen calibration, Hardware Keys, Ambient Light Sensor, Device version, OS Version, AITP Version, Taximeter, UPS and Battery Status, Roof Light, Navigation Software
- All On Field Tests and enrolling features can be used during first installation and swap of devices.

OS Image Loader

- Over The Air (OTA) OS image loader or microSDHC Card Image Loader

System Update Fleet Management

- Professional OTA (Over The Air) CLIENT allows the update of the whole Operating System and all the CPUs Firmware (option).
- Professional OTA (Over The Air) SERVER with vehicles enrolling, group management and selective update, remote logging. Web based user interface (option)

Wireless Connections

- National Semiconductor LMX9838 Bluetooth (option)
- Complete Bluetooth 2.0 Stack including

Taximeter

- Embedded Hardware Taximeter (Option)
- Full Firmware and TARIF OTA Programmable

Power Supply

- 8 - 32 V with Surge Protector

Battery

- External UPS Battery Package, Standard Battery Pack 1 hour (option)

Mounting

- All the External Connectors, Accessible slots (such as SIM Card, microSDHC, USB, etc.) and Screws are Sealed

Operating Temperature

- 20°C to 70°C

Humidity

- Humidity up to 95% non-condensing.

Vibration

- Vibration Sine wave, 10 ~ 500 ~ 10Hz, 1.5G, 0.37oct/min 3 axis, 1hour/axis.

Dust Ingress Protection

- All connectors covers sealed, no open holes

Dimension

- 185 mm x 93 mm x 25 mm (W x H x D)

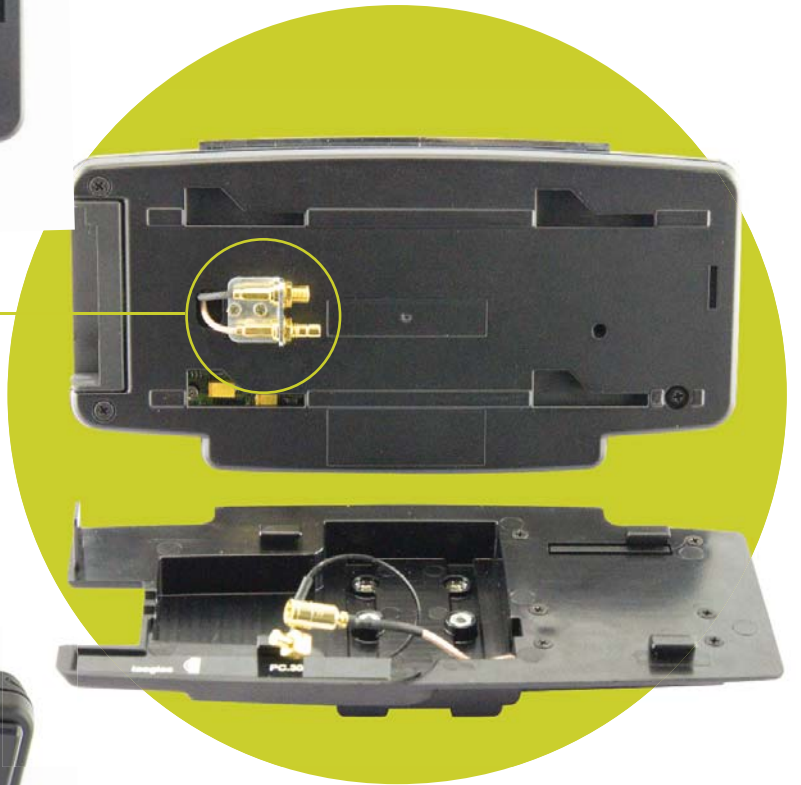
Weight

- 260 g





Antennas connectors, for eventual easy antenna swap from indoor to outdoor antennas, in case of weak signals, due to extremely shielded windscreen glass.



Dashboard fitting





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