# G14 CE

## Telematic Box

Microsoft
**Windows CE**

# G14 CE
## Telematic Box

**Digitax**
AUTOMOTIVE ELECTRONICS

# G14 CE

## Telematic Box

G14 Telematic Box

## DUAL CPU

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

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, a separate CPU – Display powerful solution. Its modem GPRS allows very reliable communication with operating headquarters. The vehicle is located by 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.

An 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 assured 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 communication.

## 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;
- microSDHC 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, that is automatically recharged.

The AITP processor gives time to user applications and Windows to close gracefully and safely 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 8 Serial Ports.

The special programmable digital inputs and outputs allow to control devices and read signals coming from generic external equipments.

**Digitax**
AUTOMOTIVE ELECTRONICS

## CPUs

Fanless Device with Primary CPU Samsung ARM 400MHz

Secondary M16 CPU for Automotive Intensive Tasks

## Ram Memory

128MB RAM Memory

## Storage Memory

128MB up to 256MB capacity of Internal Flash Memory

microSDHC (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, 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 4 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

## Wireless Connections

National Semiconductor LMX9838 Bluetooth (option)

Complete Bluetooth 2.0 Stack including

## Serial Ports

3 External RS232 Serial Ports

## I/O ports connection

5 Analog / Digital Inputs

4 Power Output Ports

Dedicated Ignition input

Dedicated Emergency Switch input

## Alarm and Security

Panic Button input

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

## Multimedia

External Speaker and Microphone

Supports wave speaker volume control

API 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 by API calls

Hard Reset available by microSDHC Card

## Safe Windows shutdown procedure.

Preshutdown notification

Disk Activity Signal Control

Internal 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

SDK for Embedded Visual C++ 4.0 (EVC4)

Sample code for SDK in C++

## G14 CE
### Telematic Box

Compact Framework 3.5 supported

Digitax Framework 4.1 (Digitax Libraries): GPS, GPRS, VoiceCall, I/O, Odometer, WatchDog, OTA, Windows Status, Stealth Mode Controller, Logs, Backup And Restore, Hardware Identification, Splash Screen, Alarm, 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

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 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, Device version, OS Version, AITP Version, Taximeter, Battery Status, 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 debugging and logging. Web based user interface (option)

### Power Supply

8 - 32 V with Surge Protector

### Battery

Standard Battery Pack 2 hours

### 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.

### Dimension

159 mm x 110 mm x 46 mm (H x W x D)

## M2 - 7" Display (Optional)



### Display

Separate CPU Unit and LCD Display

Viewing area 6.4 or 4.3 diagonal

Aspect Ratio 4:3 or 16:9

WVGA 640x480 or 480x272 Resolution

Colour TFT LED Display

Display clearly viewable with 350 cd/m2

Ambient Light Sensor with 32 Steps Automatic Regolation

### Touchscreen

Full Automotive Rugged Touchscreen with configurable touch areas.

Extended Temperature Range

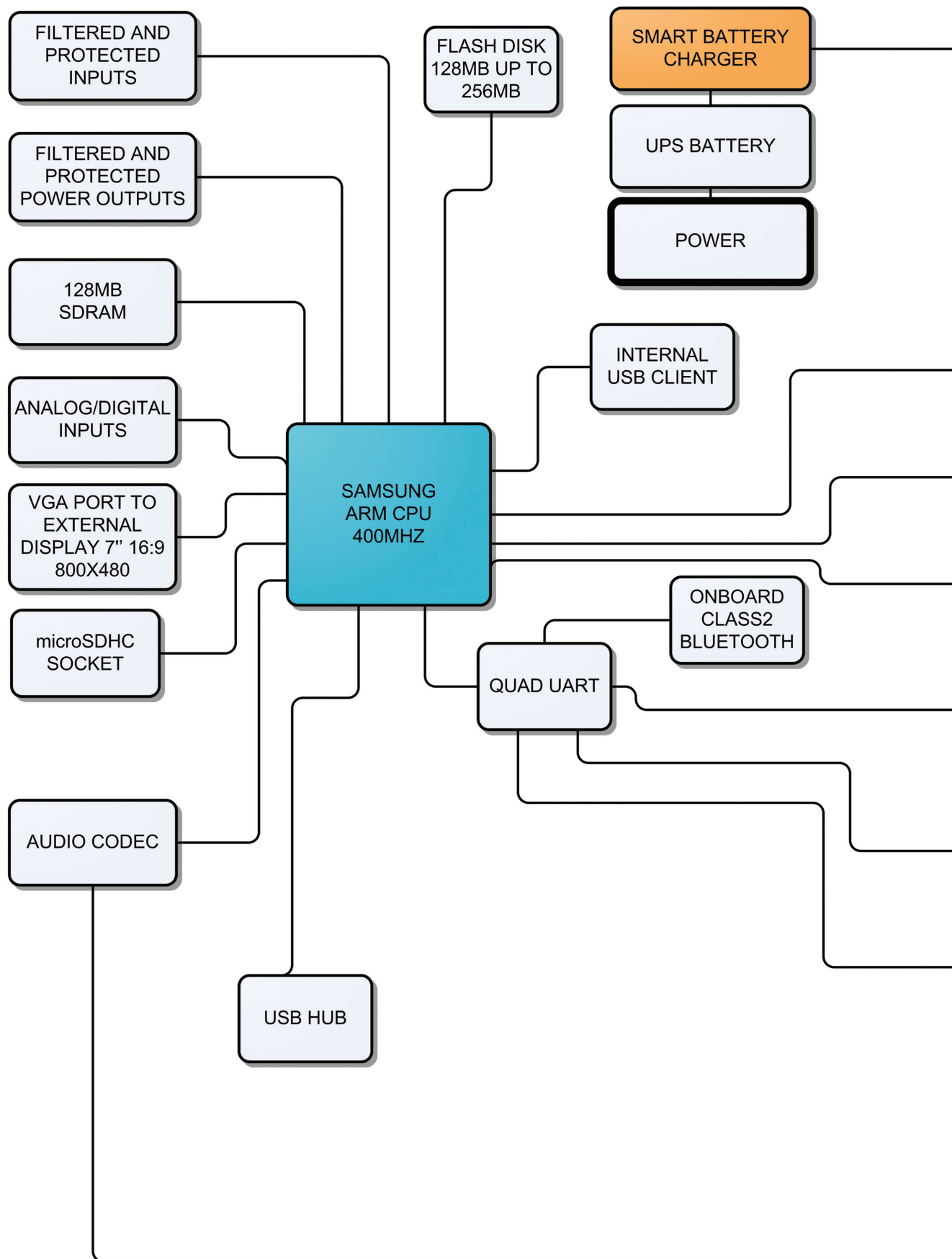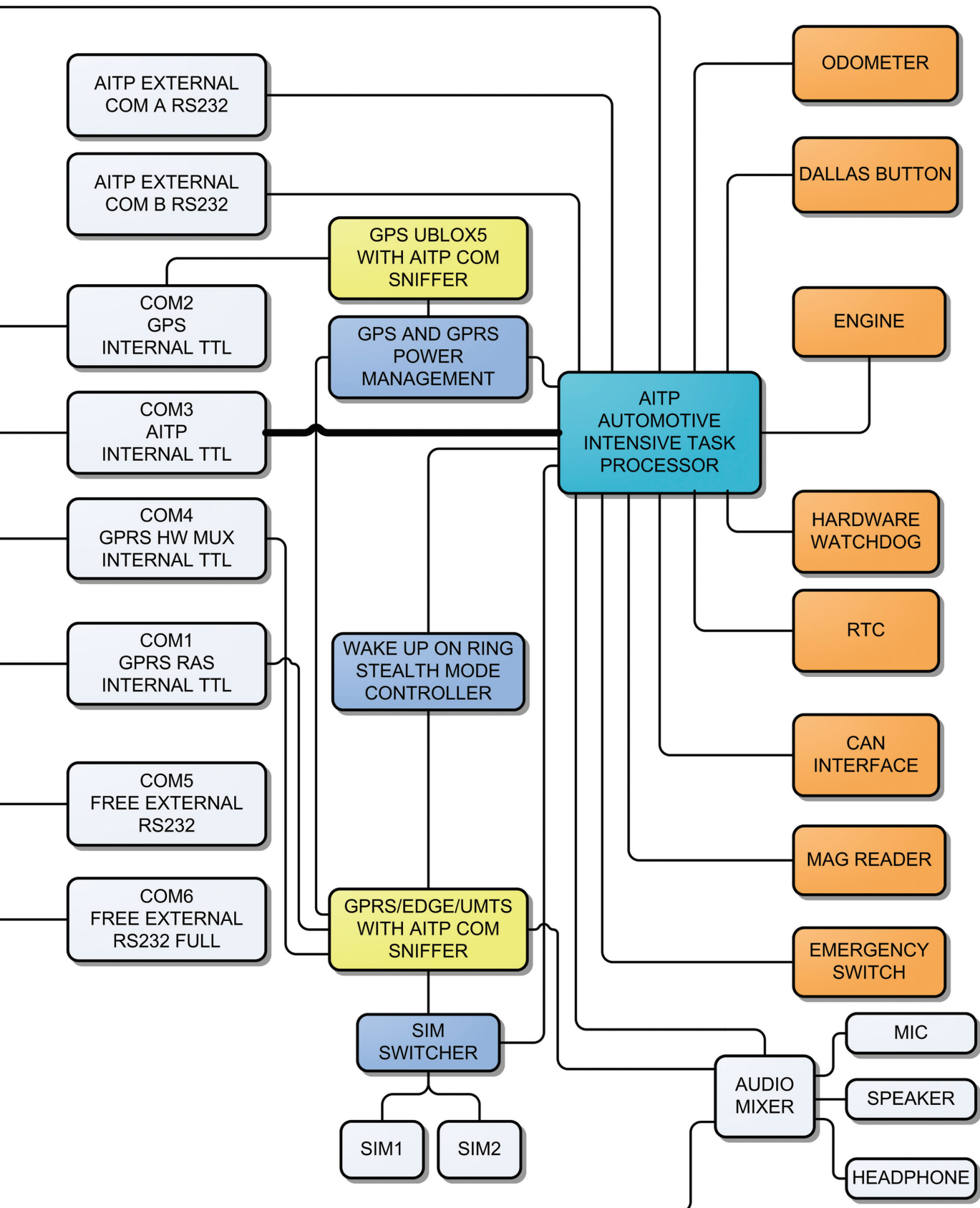Finger Type

### Stealth Display Feature

Fully Programmable Stealth display mode, Screen saver mode and sleeping mode by:

- API

Enable Switching Off LCD without powering down MDT unit.

# G14 CE
## Telematic Box

FILTERED AND PROTECTED INPUTS

FILTERED AND PROTECTED POWER OUTPUTS

128MB SDRAM

ANALOG/DIGITAL INPUTS

VGA PORT TO EXTERNAL DISPLAY 7" 16:9 800X480

microSDHC SOCKET

FLASH DISK 128MB UP TO 256MB

SMART BATTERY CHARGER

UPS BATTERY

POWER

INTERNAL USB CLIENT

SAMSUNG ARM CPU 400MHZ

ONBOARD CLASS2 BLUETOOTH

QUAD UART

AUDIO CODEC

USB HUB

AITP EXTERNAL COM A RS232

AITP EXTERNAL COM B RS232

GPS UBLOX5 WITH AITP COM SNIFFER

COM2 GPS INTERNAL TTL

GPS AND GPRS POWER MANAGEMENT

COM3 AITP INTERNAL TTL

COM4 GPRS HW MUX INTERNAL TTL

COM1 GPRS RAS INTERNAL TTL

WAKE UP ON RING STEALTH MODE CONTROLLER

COM5 FREE EXTERNAL RS232

COM6 FREE EXTERNAL RS232 FULL

GPRS/EDGE/UMTS WITH AITP COM SNIFFER

SIM SWITCHER

SIM1

SIM2

AITP AUTOMOTIVE INTENSIVE TASK PROCESSOR

ODOMETER

DALLAS BUTTON

ENGINE

HARDWARE WATCHDOG

RTC

CAN INTERFACE

MAG READER

EMERGENCY SWITCH

AUDIO MIXER

MIC

SPEAKER

HEADPHONE

# G14 CE
## Telematic Box

## OPERATIVE SYSTEM AND DEVELOPMENT TOOLS

Microsoft Windows CE .NET Operative System and Compact Framework 3.5 combined with the complete Digitax Framework 4.1 allow the developers to create their applications and their services with the maximum simplicity and in very reduced time.

by **Italtax** - Italy Headquarter

Via dell'Industria 16 - 62017 Porto Recanati (MC) - ITALY

Phone +39 071 7590984 r.a. - Fax +39 071 9797405

E-mail: info@digitax.com - Web: www.digitax.com

GPS: 43.412423,13.654716

**Microsoft** Partner
Silver OEM Hardware

| Digitax España | Digitax Electronincs U.K. | Digitax Deutschland | Digitax Nederland B.V. | Digitax CO. Mauritius |
|---|---|---|---|---|
| C/Tomás Bretón, 7 | Smokehouse, 31 | Taxitech Handelsges. mbh | Postbus 84112 | P.O. box 775 |
| 28045 – Madrid | Tanners Bank North Shields | Sommerkamp 31a - 22335 | 3009 CC ROTTERDAM | Bel Village |
| SPAIN | Tyne & Wear NE 30 1 JH | Hamburg | HOLLAND | MAURITIUS |
| Phone +34 902366292 | ENGLAND | GERMANY | Phone +31 10 4512121 | Phone +230 234 4533/4936 |
| Fax +34 915271562 | Phone +44 (0191) 296 1294 | Phone +49 40 555 05540 | Fax : +31 10 4500453 | Fax +230 234 5866 |
| Web: www.digitax-es.com | Fax +44 (0191) 257 8438 | Fax +49 40 555 05530 | E-mail: h.wittenberg@ | Web: www.mtl-co.net |
| E-mail: info@digitax-es.com | Web: www.digitax.net | Web: www.digitax-de.com | planet.nl | E-mail: mtlts@intnet.mu |
| | E-mail: digitaxuk@aol.com | E-mail: digitax@taxitech.de | E-mail: info@digitax.nu | |