

DE102008049151 (A1) — 2009-12-17

Digital storage medium e.g. subscriber identity module card, for use in slot of e.g. mobile telephone for storage of program, has electrical contacts which read detected digital sensor data

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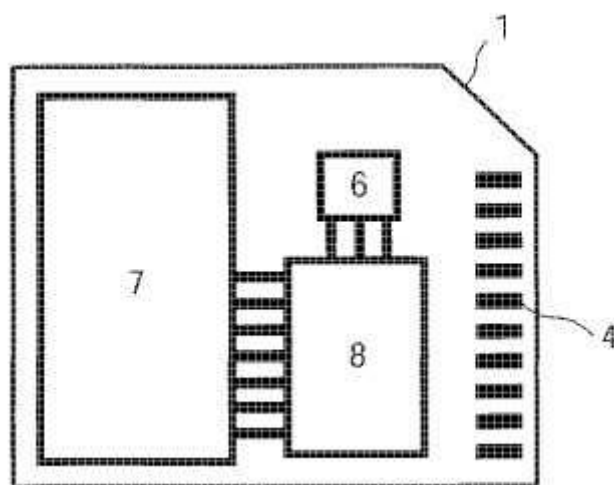
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Classification: international: [A63F13/02](#); [G11C5/00](#)
- cooperative: [G06K19/0716](#); [G06K19/07743](#); [H04N21/4183](#); [H04N21/42202](#); [A63F2300/105](#); [A63F2300/206](#)

Application number: DE20081049151 20080926

Priority number(s): [DE20081019677 20080418](#) ; DE20081049151 20080926

Abstract of DE102008049151 (A1)



#CMT# #/CMT# The medium (1) has a row of electrical contacts (4) for contacting with corresponding slot contacts (5). A firmly accommodated sensor (6) e.g. acceleration sensor or rotary sensor, detects one-, two- or three dimensional movement direction and/or rotational direction, where detected corresponding digital sensor data are read by the electrical contacts. A memory chip (7) stores digital memory data in a preset memory address region, and a controller (8) is connected with the memory chip or with the sensor. #CMT#USE : #/CMT# Digital storage medium i.e. digital memory card such as secure digital memory card and subscriber identity module (SIM) card, for insertion into a slot of a handheld device e.g. mobile telephone, smart phone, personal digital assistant and audio/video player, and an electronic organizer (all claimed), for storage of digital data e.g. program and music data. Can also be used for an EPROM or flash memory such as USBstick, compact flash (CF) card, multimedia card (MMC) and mobile memory (M2) card, for a Blackberry(RTM: handheld

wireless device). #CMT#ADVANTAGE : #/CMT# The firmly accommodated sensor detects the one-, two- or three dimensional movement direction and/or rotational direction, where the detected corresponding digital sensor data are read by the electrical contacts, thus improving functionality of the handheld device. #CMT#DESCRIPTION OF DRAWINGS : #/CMT# The drawing shows a schematic front sectional view of a mobile telephone as a handheld device with a slot and a digital storage medium comprising an acceleration sensor for insertion into the telephone. 1 : Digital storage medium 2 : Slot 4 : Electrical contacts 5 : Slot contacts 6 : Sensor 7 : Memory chip 8 : Controller.

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CLAIMS DE102008049151

1.

A digital storage medium (1) for insertion into a corresponding slot (2), in particular a handheld device (3), such as mobile phone, smart phone, PDA, audio / video player and the like, wherein the storage medium (1) a series of electrical contacts (4) for contacting with corresponding slot contacts (5),

characterized in

that the digital memory card (1) has a firmly captured sensor (6) for detecting at least one direction of movement and / or at least one direction of rotation and that this detected corresponding digital sensor data via the electrical contacts (4) are read out.

2.

A digital storage medium (1) according to claim 1, characterized in that the digital storage medium (1) comprises a memory chip (7) for storing digital data memory at a predetermined memory address range.

3.

A digital storage medium (1) according to claim 2, characterized in that the digital sensor data are addressable within the predetermined memory address range, or that the digital sensor data can be addressed in a separate, external to the memory address range sensor address range.

4.

A digital storage medium (1) according to any one of the preceding claims, characterized in that the sensor (6) based on the principle of inertia sensor, especially, an acceleration sensor and / or a gyro sensor.

5.

A digital storage medium (1) according to one of the preceding claims, characterized in that the sensor is constructed (6) for detecting a one-, two- or three-dimensional movement direction and / or for detecting a one-, two- or three-dimensional direction of rotation.

6.

A digital storage medium (1) according to any one of the preceding claims, characterized in that the sensor (6) switched on and off.

7.

Using a digital storage medium (1) for a handheld device (3) as mobile phone, PDA, audio / video player, Sharp Wizard or the like, particularly for retrofitting such handheld devices (3).

DESCRIPTION DE102008049151

[0001]

The invention relates to a digital storage medium to be inserted into a corresponding slot in particular a handheld device such as mobile phone, smartphone, PDA, audio / video player and the

like, wherein the storage medium comprises a series of electrical contacts for contacting with corresponding slot contacts.

[0002]

The invention further relates to a suitable use of a digital storage medium for a handheld device such as mobile phone, smartphone, PDA, audio / video player, an electronic organizer, a Blackberry or the like, particularly for retrofitting such handheld devices.

[0003]

Digital storage media include.

B. EPROM or Flash memory as such.

B. USB sticks and the like are included.

They are used for example for storing digital data such.

Example programs, music, and the like.

Such storage media can be inserted into a slot of a handheld device.

[0004]

On the other hand, handheld devices are known, etc. have the keys for controlling applications.

The mobile phone N95 NOKIA even has an acceleration sensor such.

As to the control of a running computer game or menus.

[0005]

According to the invention, the digital memory card to a fixed recorded sensor for detecting at least one direction of movement and / or at least one direction.

[0006]

These detected corresponding digital sensor data are read out via the electrical contacts.

[0007]

This allows the read-out advantageous from the handheld device sensor data to control applications on the handheld device used such.

As for the control of games for menu control or for other software applications.

The digital storage medium can be, for.

Example, be a SIM card for a mobile telephone.

It can, for example, an SD, CF, MMC or M2 card or a USB stick to be.

The sensor is preferably a position sensor for detecting the rotational position in space and / or a motion sensor to detect the linear movement.

With insertion of the motion sensor in the handheld device has a fixed assignment of the detection directions of the sensor is given to the housing of the handheld device.

This allows sensed acceleration or movement data is assigned and evaluated movements of the handheld device.

The inserted sensor for detecting at least one direction of movement and / or at least one direction of rotation while allowing the same functionality as an already fixed in the handheld device housed or integrated sensor.

[0008]

According to one embodiment of the memory card, this chip has a memory for storing digital data memory at a predetermined memory address range.

The memory sizes may vary.

It can, for.

As 512 MB, 2 GB or 8 GB in size.

[0009]

According to a further embodiment, the digital sensor data within the predetermined memory address range addressable.

They may alternatively or additionally be addressed in a separate, external to the memory address range sensor address range.

The storage medium behaves here like a normal storage medium in which to query specific addresses towards the sensor data z.

As can be read byte by byte.

Here, z.

B. be provided for an acceleration value for the x, y and y direction two bytes each.

It can be provided alternatively or in addition, two bytes for each direction of rotation values for the x-, y- or z-axis.

[0010]

According to a further embodiment, the sensor is based on the principle of inertia sensor, in particular an acceleration sensor and / or a gyro sensor.

The sensors are preferably integrated electronic and / or micromechanical devices.

One example is for.

B. the vibration gyro for detecting the rotational movements.

One-, two- or three-dimensional integrated sensors are known in the art.

You are such.

As incorporated into the initially described mobile phone from NOKIA.

In particular, these have a very compact size so that it can also be integrated into the memory card mentioned above.

[0011]

According to a further embodiment of the sensor for detecting a one-, two- or three-dimensional movement direction and / or for detecting a one-, two- or three-dimensional direction of rotation is formed.

As a result, applications can be controlled according to the detected motion directions such.

As movements in 3D games, or other entertainment applications.

[0012]

In particular, the sensor is switched on and off.

The on and off can be preferably performed by a switch.

However, there is also the possibility of such.

Provide as a Einschaltadresse and Ausschaltadresse over which the sensor preferably with a corresponding application, if required, can be switched on and off.

[0013]

The storage medium according to the invention is advantageous for a handheld device such as mobile phone, smartphone, PDA, audio / video player, a Sharp Wizard, a Blackberry or the like.

It is particularly suitable for the retrofitting of such handheld devices.

[0014]

The invention and advantageous embodiments of the invention are illustrated in the following figures.

In this show

[0015]

fig. 1 beispielhaft a mobile phone as a handheld device with a slot and an inventive digital memory device with an accelerometer sensor for insertion into the mobile phone,

[0016]

2 beispielhaft a mobile phone as a handheld device with an internal slot for a SIM card as the inventive digital storage medium with an acceleration sensor and

[0017]

3 beispielhaft an SD memory card as an inventive digital storage medium with an acceleration sensor.

[0018]

1 shows an example of a mobile phone as a handheld device with a slot 2 and an inventive digital storage medium 1 with an acceleration sensor 6 for insertion into the mobile phone. 3

With the reference numeral 5, a series of electrical contacts 4 of the storage medium 1 is designated for contacting with corresponding slot contacts 5.

Slot 2 is shown an example of a side of the handheld device 3 disposed slot.

[0019]

By the reference numeral 8 designates a controller which both the memory chip 7, such.

As a flash memory, and connected to the sensor 6.

The controller 8 preferably coordinates the bidirectional data traffic from the memory chip 7 to the electrical contacts 4 and over the electrical contacts to the handheld device 4 to reach the third

Preferably, the memory chip 7 is used with address previously specified addresses entered by the sensor 6 movement data.

[0020]

2 shows an example of a mobile phone as a handheld device 3 with an internal slot 2 for a SIM card as the inventive digital storage medium 1 with an acceleration sensor. 6

[0021]

3 beispielhaft an SD memory card as an inventive digital storage medium 1 with an acceleration sensor 6 in an enlarged view.