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(54) FEEDBACK STRUCTURE FOR AN ORGANIC LIGHT-EMITTING DIODE DISPLAY

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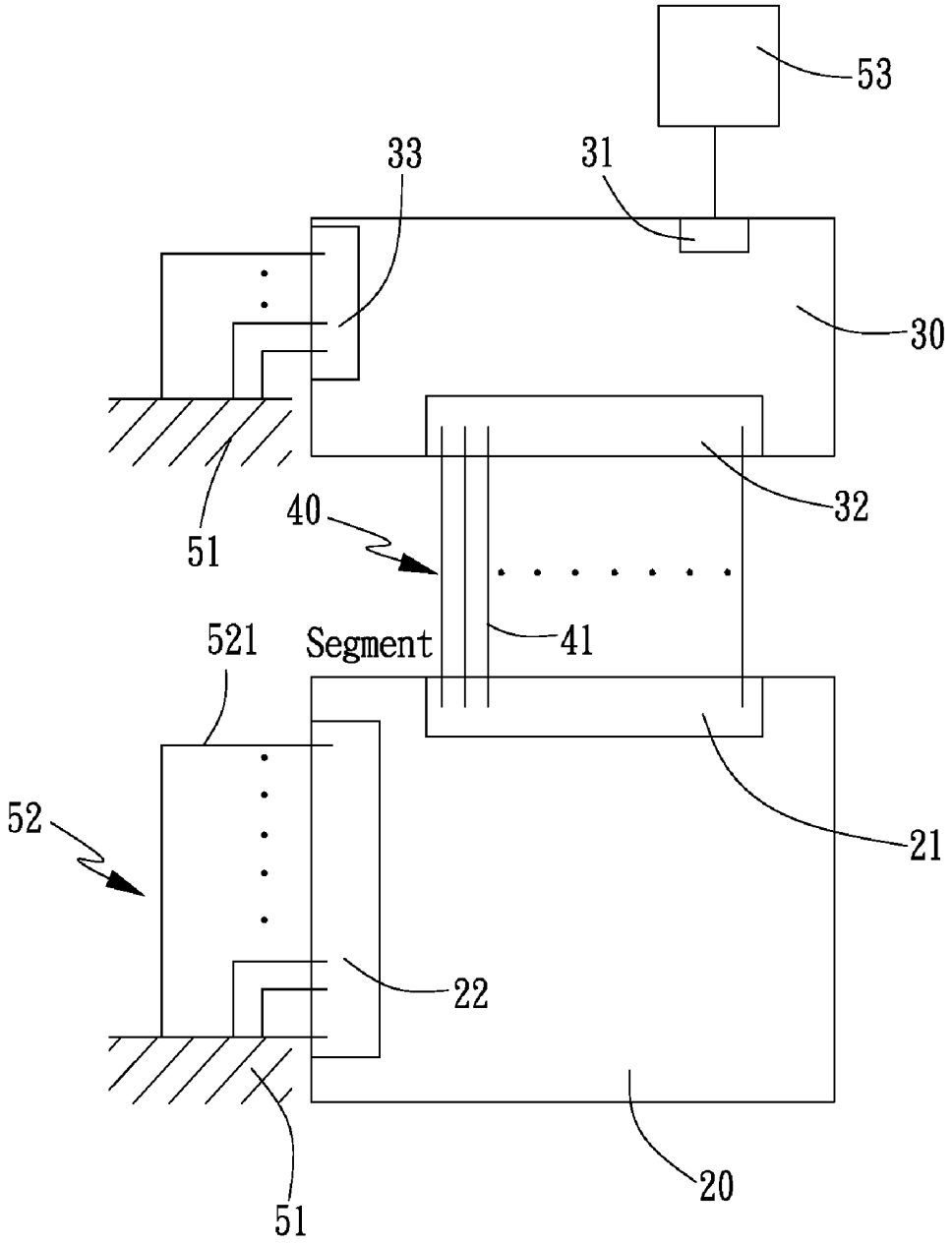
(57) **ABSTRACT**

A feedback structure for an organic light-emitting diode display comprises an organic light-emitting diode panel, a driver chip and a signal transmission line group. The organic light-emitting diode panel includes a signal input terminal group and a signal feedback term connected to the ground. The driver chip includes a power input port connected to an external power source, a signal input port, and a feedback port connected to the ground. The signal transmission line group is electrically connected between the signal input terminal group and the signal output port. By such arrangements, it can ensure a stable segment control signal or avoid damage to the driver chip.



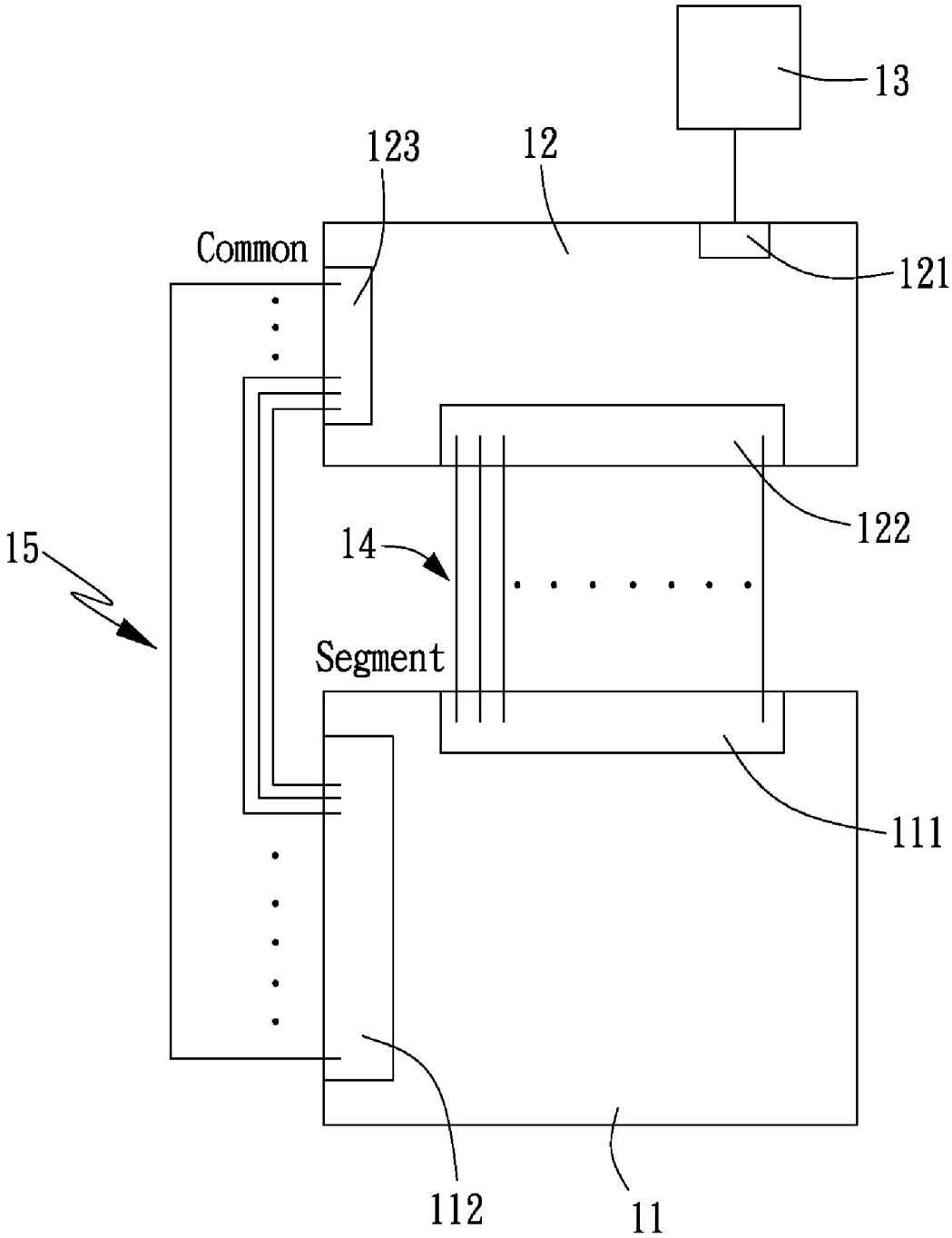


FIG. 1
PRIOR ART

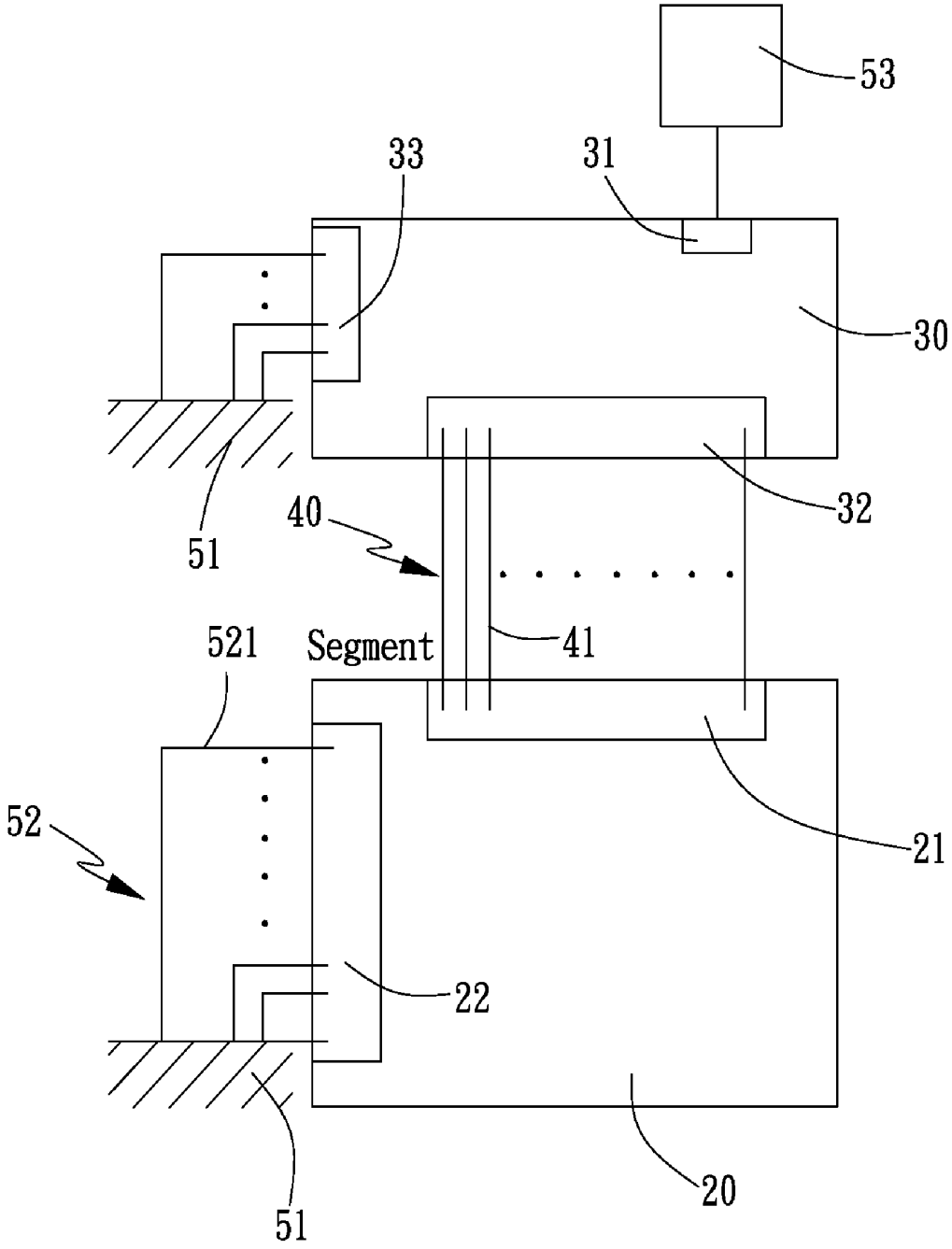


FIG. 2

FEEDBACK STRUCTURE FOR AN ORGANIC LIGHT-EMITTING DIODE DISPLAY

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to an organic light-emitting diode display, and more particularly to a feedback structure for an organic light-emitting diode display.

[0003] 2. Description of the Prior Art

[0004] Organic light-emitting diode (hereinafter called OLED) displays are divided into two types according to the drive modes: one is passive matrix type and the other is active matrix type. The active matrix OLED displays employ capacitor to store signal, so that the pixel will still maintain its original lightness after being scanned by the scanning beam. In the passive matrix OLED displays, only the pixels which are scanned by the scanning beam can be turned on. However, the image displaying light sources of the OLED panel for both the passive matrix OLED displays and the active matrix OLED displays are driven by a driver chip.

[0005] Referring to FIG. **1** which is a circuit diagram illustrating a structural relationship between a conventional OLED panel **11** and a driver chip **12**, the OLED panel **11** comprises a signal input terminal group **111** and a signal feedback terminal group **112**. The driver chip **12** includes a power input port **121** connected to an external power source **13**, a signal output port **122** and an earthing feedback port **123**. The signal output port **122** is electrically connected to the signal input terminal group **111** of the OLED panel **11** through a signal transmission line group **14**. The feedback port **123** is electrically connected to the signal feedback terminal group **112** of the OLED panel **11** through a feedback line group **15**. Hence, the OLED panel **11** will be turned on by the driver chip **12** through the cooperation of a segment control signal form the signal output port **122** and a common control signal from the feedback port **123**. However, the above OLED display suffers from the following drawbacks in practice use:

[0006] Since the feedback port **123** of the driver chip **12** is electrically connected to the signal feedback terminal group **112** through the feedback line group **15**, when the OLED panel **11** is turned on, the respective terminals of the signal feedback terminal group **112** of the OLED panel will all output an electric current into the driver chip **12**. However, if overlarge current flows into the driver chip **12**, it will lead to over-heat inside the driver chip **12**, which might cause the segment control signal unstable, or even burn down the driver chip **12**. Specially, if the feedback port **123** of the driver chip **12** has over-many terminals (in other words, the signal feedback group **111** of the OLED panel **11** has over-many terminals), the above drawback is more likely to occur in the above OLED panel **11**.

[0007] The present invention has arisen to mitigate and/or obviate the afore-described disadvantages.

SUMMARY OF THE INVENTION

[0008] The primary objective of the present invention is to provide a feedback structure for an organic light-emitting diode display which can avoid damage to the driver chip.

[0009] The secondary objective of the present invention is to provide a feedback structure for an organic light-emitting diode display which can prevent the driver chip from outputting an unstable segment control signal.

[0010] Hence, to achieve the above objectives, a feedback structure for an organic light-emitting diode display in accordance with the present invention comprises an organic light-emitting diode panel, a driver chip and a signal transmission line group. The organic light-emitting diode panel includes a signal input terminal group and a signal feedback term connected to the ground. The driver chip includes a power input port connected to an external power source, a signal input port, and a feedback port connected to the ground. The signal transmission line group is electrically connected between the signal input terminal group and the signal output port.

[0011] Preferably, the signal feedback terminal group of the organic light-emitting diode panel is electrically connected to a first end of a feedback circuit group, and a second end of the feedback circuit group is connected to the ground.

[0012] Preferably, the signal transmission line group includes plural signal transmission circuits, the signal input terminal group includes plural terminals, the signal output port includes the same number of terminals as the signal input terminal group, the respective signal transmission circuits are electrically connected between the respective terminals of the signal input terminal group and the respective terminals of the signal output port.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. **1** is a circuit diagram illustrates a structural relationship between a conventional OLED panel and a driver chip; and

[0014] FIG. **2** is a circuit diagram of a feedback structure for an organic light-emitting diode display in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0015] The present invention will be clearer from the following description when viewed together with the accompanying drawings, which show, for purpose of illustrations only, the preferred embodiment in accordance with the present invention.

[0016] Referring to FIG. **2** which is a circuit diagram of a feedback structure for an organic light-emitting diode display in accordance with a preferred embodiment of the present invention, the organic light-emitting diode (hereinafter called OLED) display can be a passive matrix OLED display or an active matrix OLED display. The OLED display comprises an OLED panel **20**, a driver chip **30**, and a signal transmission line group **40**.

[0017] The OLED panel **20** includes a signal input terminal group **21** and a signal feedback terminal group **22** connected to the ground **51**. The signal input terminal group **21** includes plural terminals, and the signal feedback terminal group **22** includes plural terminals connected to the ground **51**. In the present embodiment, the signal feedback terminal group **22** is connected to the ground **51** in such a manner that the signal feedback terminal group **22** is electrically connected to a first end of a feedback circuit group **52**, and a second end of the feedback circuit group **52** is connected to the ground **51**. In addition, the feedback circuit group **52** includes plural feedback circuits **521** the number of which is the same as that of the terminals of the signal feedback terminal group **22**.

[0018] The driver chip **30** includes a power input port **31** connected to an external power source **53**, a signal output port **32**, and a feedback port **33** connected to the ground **51**. The

signal output port **32** includes the same number of terminals as the signal input terminal group **21**.

[0019] The signal transmission line group **40** is electrically connected between the signal input terminal group **21** and the signal output port **32**. The signal transmission line group **40** includes plural signal transmission circuits **41** which are electrically connected between the respective terminals of the signal input terminal group **51** and the respective terminals of the signal output port **32**.

[0020] The aforementioned is the summary of the positional and structural relationship of the respective components of the preferred embodiment in accordance with the present invention.

[0021] Hence, since the signal feedback terminal group **22** of the OLED panel **20** is directly connected to the group **51** or connected to the ground **51** through the feedback circuit group **52**, when the driver chip **30** sends out a segment control signal, the OLED panel **20** will be turned on. The electric current outputted from the respective terminals of the signal feedback group **22** of the OLED panel **20** will directly flow to the ground **51** but not flow inside the driver chip **30**, avoiding damage to the driver chip **30** or occurrence of unstable segment control signal.

[0022] While we have shown and described various embodiments in accordance with the present invention, it is clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

What is claimed is:

1. A feedback structure for an organic light-emitting diode display comprising:

an organic light-emitting diode panel including a signal input terminal group and a signal feedback terminal group connected to the ground;

a driver chip including a power input port connected to an external power source, a signal output port, and a feedback port connected to the ground; and

a signal transmission line group electrically connected between the signal input terminal group and the signal output port.

2. The feedback structure for an organic light-emitting diode display as claimed in claim **1**, wherein the signal feedback terminal group of the organic light-emitting diode panel is electrically connected to a first end of a feedback circuit group, and a second end of the feedback circuit group is connected to the ground.

3. The feedback structure for an organic light-emitting diode display as claimed in claim **1**, wherein the signal transmission line group includes plural signal transmission circuits, the signal input terminal group includes plural terminals, the signal output port includes the same number of terminals as the signal input terminal group, the respective signal transmission circuits are electrically connected between the respective terminals of the signal input terminal group and the respective terminals of the signal output port.

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专利名称(译)	有机发光二极管显示器的反馈结构		
公开(公告)号	US20120086626A1	公开(公告)日	2012-04-12
申请号	US12/900231	申请日	2010-10-07
[标]申请(专利权)人(译)	廖昱PIN 刘英JU CHIANG CHIH魏		
申请(专利权)人(译)	廖昱-PIN 刘英-JU CHIANG CHIH-WEI		
当前申请(专利权)人(译)	廖昱-PIN 刘英-JU CHIANG CHIH-WEI		
[标]发明人	LIAO YU PIN LIU YING JU CHIANG CHIH WEI		
发明人	LIAO, YU-PIN LIU, YING-JU CHIANG, CHIH-WEI		
IPC分类号	G09G3/30		
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外部链接	Espacenet USPTO		

摘要(译)

用于有机发光二极管显示器的反馈结构包括有机发光二极管面板，驱动器芯片和信号传输线组。有机发光二极管面板包括信号输入端子组和连接到地的信号反馈项。驱动器芯片包括连接到外部电源的电源输入端口，信号输入端口和连接到地的反馈端口。信号传输线组电连接在信号输入端子组和信号输出端口之间。通过这样的布置，它可以确保稳定的段控制信号或避免损坏驱动器芯片。