(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 3 401 768 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
14.11.2018 Bulletin 2018/46

(21) Application number: **18180405.5**

(22) Date of filing: **05.06.2015**

(51) Int Cl.:
G06F 3/041 *(2006.01)* ***G06F 3/01*** *(2006.01)*
G06F 3/044 *(2006.01)*

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **26.08.2014 KR 20140111849**

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
15170773.4 / 2 993 562

(71) Applicant: **LG Display Co., Ltd.**
Youngdungpo-gu
Seoul
150-721 (KR)

(72) Inventors:
- **KIM, Eun Jung**
  150-051 Seoul (KR)
- **SON, Ji Eun**
  413-779 Paju-si, Gyeonggi-do (KR)
- **CHO, Sung Yong**
  134-882 Seoul (KR)
- **KIM, Ki Seon**
  411-311 Goyang-si, Gyeonggi-do (KR)

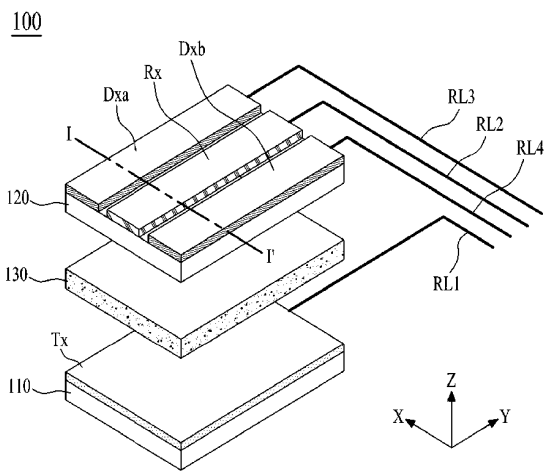
(74) Representative: **Viering, Jentschura & Partner mbB**
Patent- und Rechtsanwälte
Am Brauhaus 8
01099 Dresden (DE)

Remarks:
This application was filed on 28-06-2018 as a divisional application to the application mentioned under INID code 62.

(54) TOUCH PANEL

(57) Embodiments relate to a touch panel (100; 200; 300) operable in a first haptic mode and a second haptic mode. The touch panel (100; 200; 300) includes first electrodes (Tx) and second electrodes (Rx, Dxa, Dxb) intersecting the first electrodes (Tx). The touch panel (100; 200; 300) further includes an elastic dielectric member (130) disposed between the first electrodes (Tx) and the second electrodes (Rx, Dxa, Dxb) to separate the first electrodes (Tx) and the second electrodes (Rx, Dxa, Dxb). The first electrodes (Tx) are applied with a first voltage during the first haptic mode. The second electrodes (Rx, Dxa, Dxb) are applied with a reference voltage in the first haptic mode. A subset of the second electrodes (Rx, Dxa, Dxb) is applied with a second voltage to generate electrostatic force between the subset of the second electrodes (Rx, Dxa, Dxb) and a user's finger in the second haptic mode. The elastic dielectric member (130) vibrates in response to the first voltage applied to the first electrodes (Tx) in the first haptic mode.

FIG. 2



EP 3 401 768 A1