(19) (KR) (11) 10-2010-0039977
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(21) 10-2008-0098991
(22) 2008 10 09

(71)

20

(72)

327-23 LG R
D Campus

(74)

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(54)

(57)

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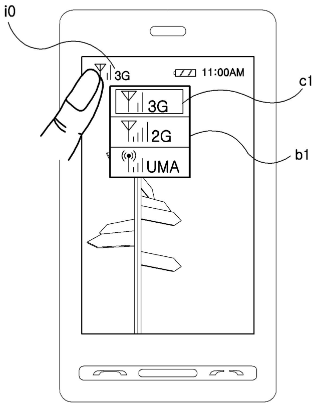
- 8


i0
3G
11:00AM
c1
3G
2G
UMA
b1

1

2 ;

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2

1 ,

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3

1 ,

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4

1 ,

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5

1 ,

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6

(a) ;

(b)

;

(c)

.

7

6 ,

(a) ,

,

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8

6 7 ,

,

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9

(a) ;

(b) 2 ,

;

(c) , ,

.

10

9 ,

(b) ,

,

;

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11

9 ,

(b) ,

;

.

12

10 11 ,

,

.

[0001] , 2
.

[0002]

[0003] (mobile/portable terminal) (stationary terminal) . ( ) (handheld terminal) (vehicle mount terminal) .

[0004] (terminal) , , , , (Multimedia player) .

[0005] , / .

[0006] , / ( ).

[0007] 2
.

[0008] ,
.

[0009] , 2 ; ; , .

[0010] , ; ; .

[0011] , .

[0012] , ; 2 , ; , , .

[0013] , .

[0014] , .

[0015]

[0016] , . " " " " , .

[0017] , (smart phone), (laptop computer), , PDA(Personal Digital Assistants), PMP(Portable Multimedia Player), . , , TV, .

[0018] 1 (block diagram) .

[0019] (100) (110), A/V(Audio/Video) (120), (130), (140), (150), (160), (170), (180) (190) . 1 , .

[0020] , .

[0021] (110) (100) (100) (100) . , (110) (111), (112), (113), (114)

(115) .

[0022] (111) / .

[0023] , . , / / . , TV , , , TV .

[0024] , , . , . (112) .

[0025] . , DMB(Digital Multimedia Broadcasting) EPG(Electronic Program Guide) DVB-H(Digital Video Broadcast-Handheld) ESG(Electronic Service Guide) .

[0026] (111) , , DMB-T(Digital Multimedia Broadcasting-Terrestrial), DMB-S(Digital Multimedia Broadcasting-Satellite), MediaFLO(Media Forward Link Only), DVB-H(Digital Video Broadcast-Handheld), ISDB-T(Integrated Services Digital Broadcast-Terrestrial) . , (111) , .

[0027] (111) / (160) .

[0028] (112) , , , . , , / .

[0029] (113) , (100) . WLAN(Wireless LAN)(Wi-Fi), Wibro(Wireless broadband), Wimax(World Interoperability for Microwave Access), HSDPA(High Speed Downlink Packet Access) .

[0030] (114) . (short range communication) (Bluetooth), RFID(Radio Frequency Identification), (IrDA, infrared Data Association), UWB(Ultra Wideband), ZigBee .

[0031] (115) , GPS(Global Position System) .

[0032] 1 , A/V(Audio/Video) (120) , (121) (122) . (121) . (151) .

[0033] (121) (160) (110) . (121) 2 .

[0034] (122) , (Microphone) . (112) . (122) (noise) .

[0035] (130) . (130) (key pad) (dome switch), (/), , .

[0036] (140) (100) , (100) , , , / (100) (100) . (100) . , (190) , (170) . , (140) (141) .

[0037] (150) , , (151), (152), (153), (154) .

[0038] (151) (100) ( ) . , UI(User Interface) GUI(Graphic User Interface) . (100) / UI, GUI .

[0039] (151) (liquid crystal display, LCD), (thin film transistor-liquid crystal display, TFT LCD), (organic light-emitting diode, OLED), (flexible display), 3 (3D display) .

[0040] . , TOLED(Transparant OLED) . (151) . , (151) .

[0041] (100) (151) 2 . , (100) , .

[0042] (151) (, ' ') (, ' ') , (151) . , , , , .

[0043] (151) (151) . , .

[0044] , ( ) . ( ) (180) . , (180) (151) .

[0045] 1 , (141) . , . .

[0046] , , , , , , . . ( ) .

[0047] , " (proximity touch)" , " (contact touch)" . , .

[0048] , , (, , , , , ,) .

.

[0049] (152) , , , (110) (160) . (152) (100) (, ,) . (152) (Receiver), (speaker), (Buzzer) .

[0050] (153) (100) . , , , . (153) , . (151) (152) , (151,152) (153) .

[0051] (haptic module)(154) . (154) . (154) . , .

[0052] (154) , , , , , (eletrode) , , .

[0053] (154) , . (154) (100) 2 .

[0054] (160) (180) , / (, , , ,) . (160) .

[0055] (160) (flash memory type), (hard disk type), (multimedia card micro type), (SD XD), (Random Access Memory, RAM), SRAM(Static Random Access Memory), (Read-Only Memory, ROM), EEPROM(Electrically Erasable Programmable Read-Only Memory), PROM(Programmable Read-Only Memory), , , . (100) (internet) (160) (web storage) .

[0056] (170) (100) . (170) , (100) , (100) . , / , , / , (memory card) , , I/O(Input/Output) , I/O(Input/Output) , (170) .

[0057] (100) , (User Identify Module, UIM), (Subscriber Identify Module, SIM), (Universal Subscriber Identity Module, USIM) . (' ') , (smart card) . (100) .

[0058] (100) (cradle) (100) , . .

[0059] (controller, 180) . ,

, . (180)
(181) . (181) (180) , (180)
.

[0060] (180)
.

[0061] (190) (180) ,
.

[0062] , ,
.

[0063] , ASICs (application specific integrated circuits), DSPs (digital signal processors), DSPDs (digital signal processing devices), PLDs (programmable logic devices), FPGAs (field programmable gate arrays, (processors), (controllers), (micro-controllers), (microprocessors),
. (180)
.

[0064] ,
.
.
. (160) , (180) .

[0065] 2a .

[0066] (100) . , , 2
, , ,
.

[0067] (, ,) . ,
(101) (102) . (101) (102)
. (101) (102)
.

[0068] , (STS) (Ti)
.

[0069] , (101) (151), (152), (121),
(130/131,132), (122), (170) .

[0070] (151) (101) . (151)
(151) (121) ,
(131) (122) . (132) (170) (101)
(102) .

[0071] (130) (100) ,
(131,132) . (131,132) (manipulating portion)
, (tactile manner)
.

[0072] 1 2 (131, 132) . , 1
(131) , , , 2 (132) (152)
(151)
.

[0073] 2b 2a .

[0074] 2b , , (102) (121')
. (121') (121, 2a) , (121)
.

[0075] , (121)
, (121')
. (121,121') (pop-up)
.

[0076] (121') (123) (124) . (123) (121')
. (124) (121')
( ) , .

[0077] (152') . (152') (152,
2a) ,
.

[0078] (124)
. (111, 1) (124)
.

[0079] (100) (190) . (190)
, .

[0080] (102) (135) . (135)
(151) . , (151)
, (135) .
(135) . , (135)
, (102) .

[0081] (135) (101) (151) . (135)
(151) . (135) (151)
.

[0082] , 3a 3b (151) (135)
.

[0083] 3a 3b .

[0084] (151) . , , ,
, .

[0085] , , ,
. ' ' .

[0086] 3a .

[0087] (151) , . ,
.

[0088] , (151) (151a) (151b) . (151
a) (151b) . (151b)
(151c) . (151c) ,
(151a) . 1 (131) (151a)
.

[0089] 3b . 3a
(portrait) , 3b (landscape) .
(151) .

[0090] 3b . (151) (151a')
(151b') . (151b') , , (151c')
. (151c') (QWERTY) .

[0091] (135, 2b) (151c') , ,
, (151a') . , (135)
(151) (151c')
. (151) (135) ,
, .

[0092] , (151) (135) (scroll)
. (151) (135)
(151) , . ,
(151) (135) ,
(151) . (151)
.

[0093] (151)( ) (135) ,
. ,
(clamping) . , , (151)
(135) .

[0094] 1 (141) , 4 .

[0095] 4 .

[0096] 4 , ,
(141) .

[0097] (141) (" ")
.

[0098] 4 3 .
3 4 .

[0099] , (d_0)
. d_1 1
. d_1 d_2
2 . d_2 d_3
3 .
d_3 .

[0100] , (180)
, .

[0101] 5 (155,156)
.

[0102] (folding) .
1 (155) TOLED , 2

(156) LCD . 1 2 (155 156) .

[0103] , 1 TOLED(155) { (contact touch) (proximity-touch)} , (180) TOLED(155) (select) (run) .

[0104] , (overlap) TOLED(155) LCD(156) , , , & (drag) .

[0105] ( ) TOLED(155) LCD(156) . , TOLED(155) , (, 2 3) , (180) LCD(156)) .

TOLED(155) .

[0106] LCD(156) ( ) TOLED(155) . , LCD(156) TOLED(155) , (180) TOLED(155) . , TOLED(155) , TOLED(155) , (flicking), (swirling) LCD(156) . LCD(156) 2 TOLED(155) .

[0107] , , (180) , TOLED(155) . 2 ( ) ( ) .

[0108] , TOLED(155) , (180) LCD(156) ( ) , ( ) . , ( ) , (180) .

[0109] ( ) TOLED(155) (2 3) ( ) .

[0110] , (180) .

[0111] (overlap) . , .

[0112] 6a 6b .

[0113] 6a . (151) , 6a (a) , 1 (A) 2 (B) . 1 (A) 2 (B) . , 2 (B) 1 , 1 (A) 1 2 2 .

[0114] , . ,

. , 6a (a) , 1 (A) 2 (B) , 1 (A) .

[0115] 6a (b) , 3 (A, B, C) , 6
a (c) , N(N>4) .
. 3
, .

[0116] (151) . ,
6b (a) , (151)
'C', 'B', 'A' , (151)
. , , 6b
(b) 'H' , (151)
.

[0117] , 6a
, , ,
.

[0118] , , 2
; ;
, .

[0119]
,
. ,
.

[0120] , 2 .

[0121] ,
.

[0122]

[0123] 7 .

[0124] (i0) , ,
, 2 .
(i0) , .

[0125] , ,
. .

[0126] , (, (i0)
) .
, , .

[0127] , 8 , (i0)
, (b1) .
(b1) 3 ,
(c1) .

[0128] (b1) 3 ,
, (b1) ,
.

[0129] , 9 ,
(S20)
(S30); (S40)
(S50);
(S70) .

[0130] 10 11 7
, 12 .
.

[0131] 12 ,
(S110); (S120),
(S130); (S140),
(S150);
(S160), ,
(S170) .

[0132] 10 S110 .
. (n1) send (k1)
, (i0) 3G ,
.

[0133] , , (i0)
(S120), 10 (b1)
, ,
. , send (k1) , ,
.

[0134] 13 (i1, i2, i3)
.

[0135] , (i1, i2, i3) ,
, (i2)
(c2) .

[0136] , (, (c2)
) .
, ,
.

[0137] , 3 (i1, i2, i3) , (c2) 2G
13 , UMA
(i3) , 14 (c2) UMA (i3)
. (c2) , UMA
.

[0138] , , 15 ,
(S230);
(S240)
(S250);
(S270) .

[0139] , .
, 16 17

, send (k1) ,
.

[0140] , 18 ,
(S310);
(S330);
(S350); (S360),
,
(S370) .

[0141] , , ,
. , ROM, RAM, CD-ROM, ,
, , (,)
.

[0142]
,
.

[0143] 1 .

[0144] 2 .

[0145] 3 2 .

[0146] 4 .

[0147] 5 4 .

[0148] 6 4 .

[0149] 7 .

[0150] 8
.

[0151] 9 .

[0152] 10 11 .

[0153] 12 .

[0154] 13 .

[0155] 14
.

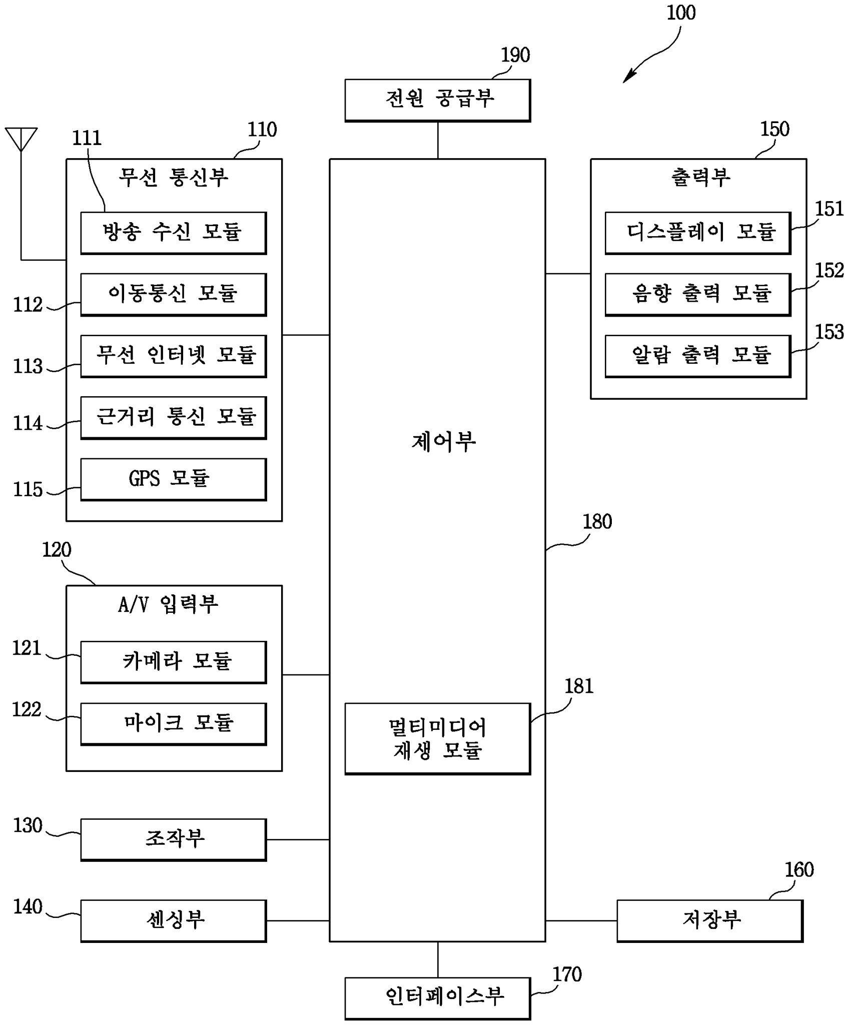
[0156] 15 .

[0157] 16 17 .

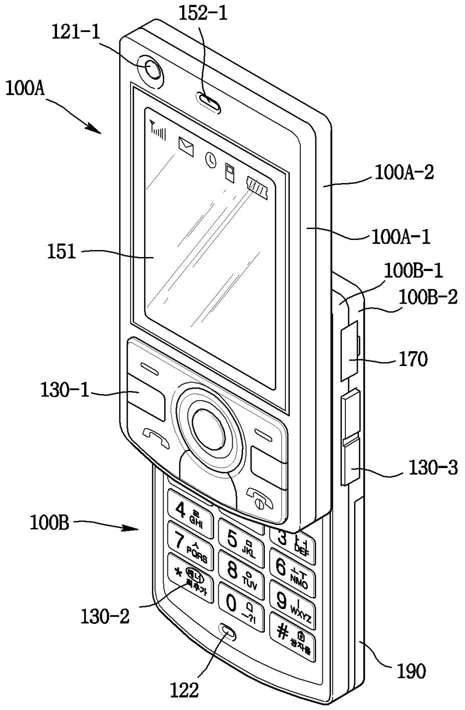
[0158] 18 .

[0159]

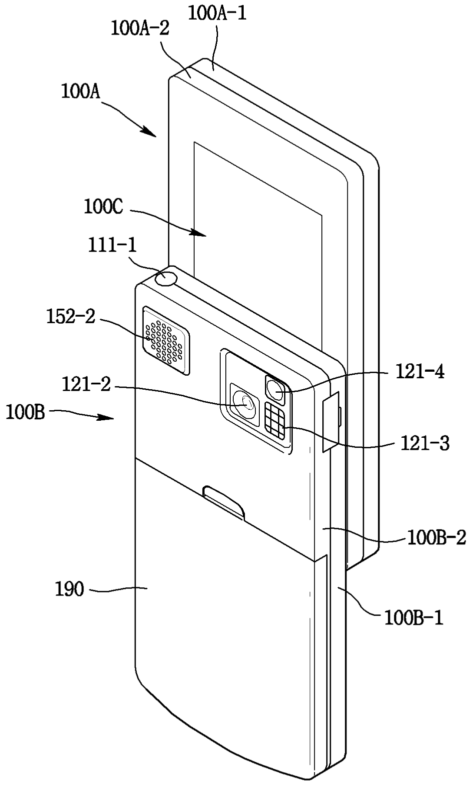
1


100
190
전원 공급부
110
111
무선 통신부
방송 수신 모듈
112
이동통신 모듈
113
무선 인터넷 모듈
114
근거리 통신 모듈
115
GPS 모듈
150
출력부
151
디스플레이 모듈
152
음향 출력 모듈
153
알람 출력 모듈
제어부
180
120
A/V 입력부
121
카메라 모듈
122
마이크 모듈
181
멀티미디어 재생 모듈
130
조작부
140
센싱부
160
저장부
170
인터페이스부

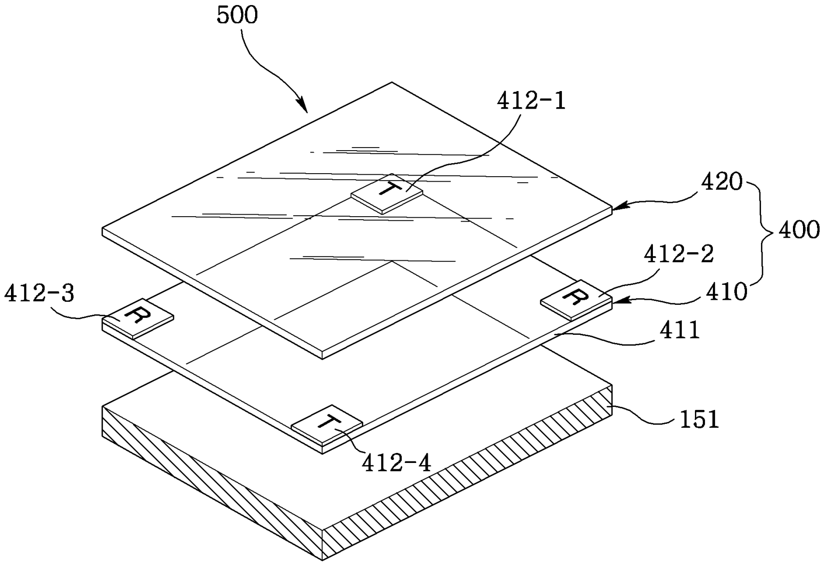
2


121-1
152-1
100A
100A-2
100A-1
151
100B-1
100B-2
170
130-1
130-3
100B
130-2
190
122

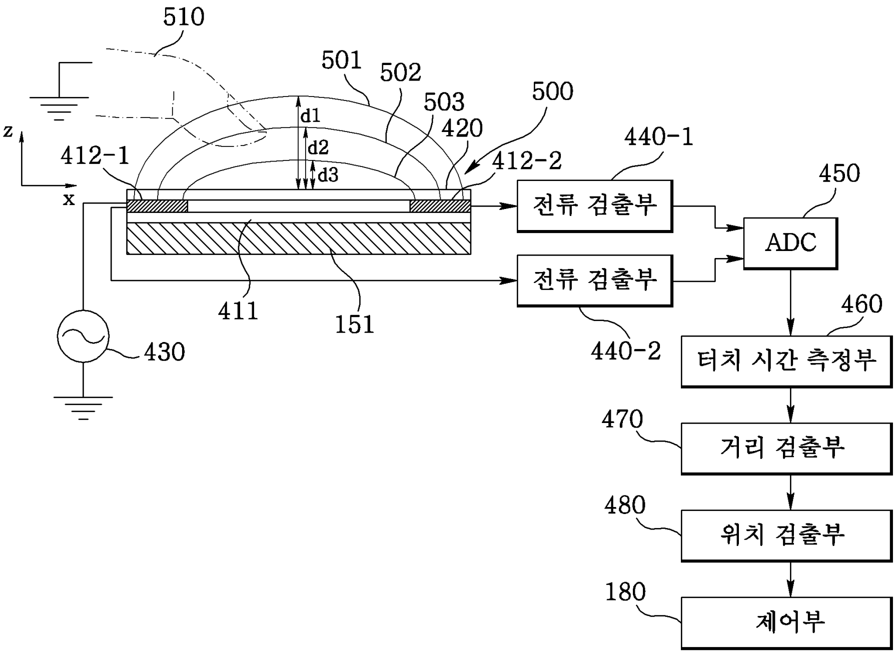
3


100A-1
100A-2
100A
100C
111-1
152-2
121-4
121-2
100B
121-3
100B-2
190
100B-1

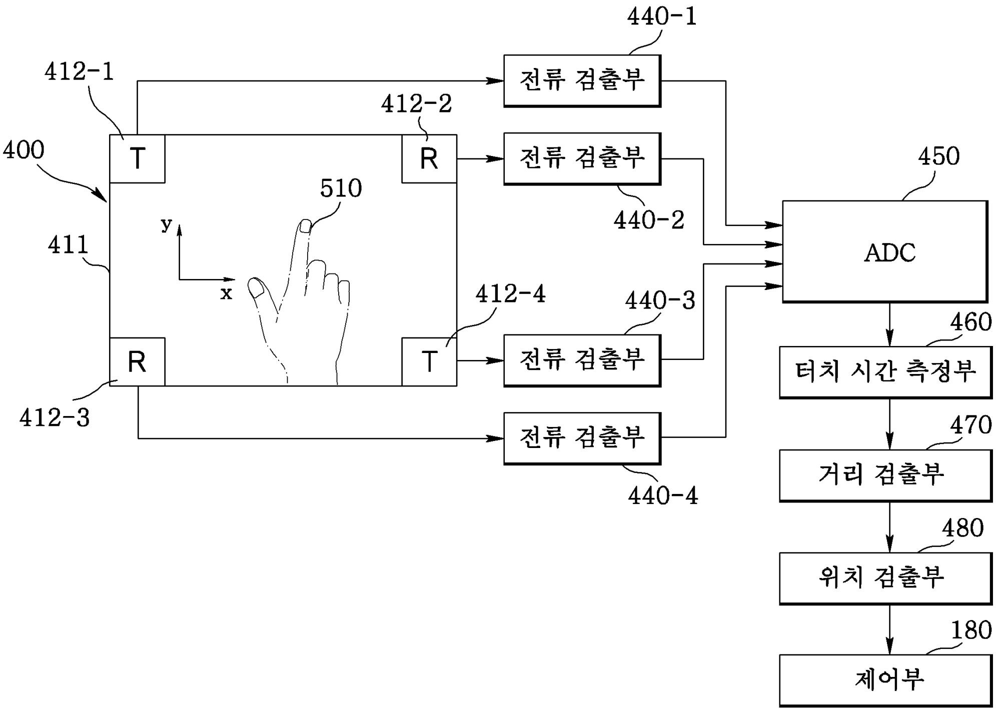
4


500
412-1
420
400
412-2
410
412-3
411
151
412-4
T
R
R
T

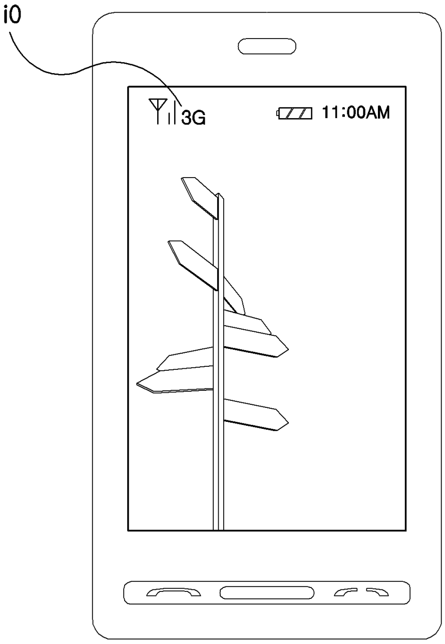
5


510
501
502
503
500
420
d1
d2
d3
z
x
412-1
412-2
440-1
450
전류 검출부
ADC
전류 검출부
411
151
460
430
440-2
터치 시간 측정부
470
거리 검출부
480
위치 검출부
180
제어부

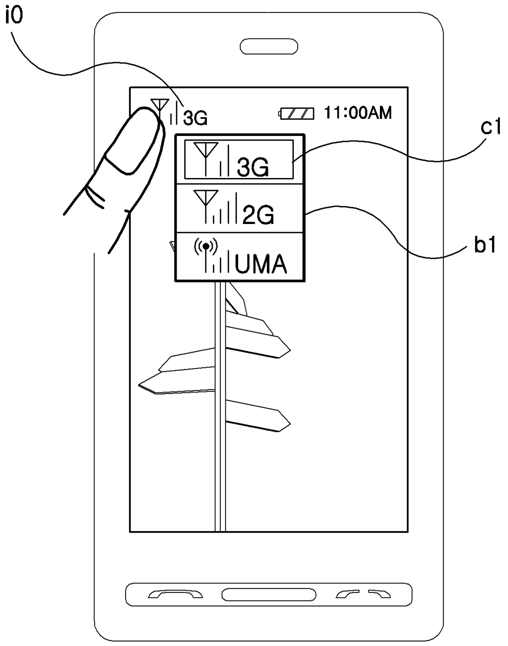
6


440-1
412-1
전류 검출부
412-2
400
T
R
전류 검출부
450
510
440-2
411
y
x
ADC
412-4
440-3
R
T
전류 검출부
460
터치 시간 측정부
412-3
전류 검출부
470
440-4
거리 검출부
480
위치 검출부
180
제어부

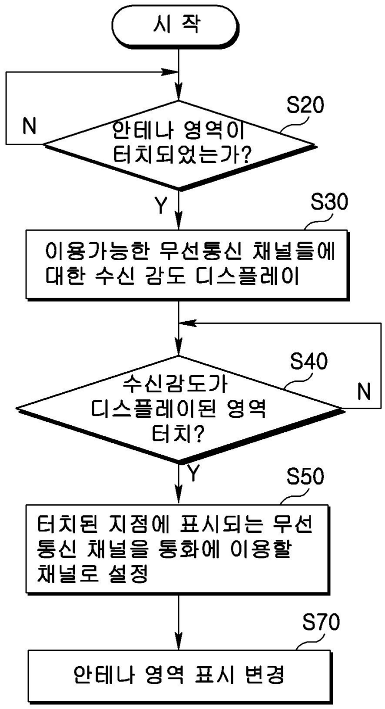
7


i0
3G
11:00AM

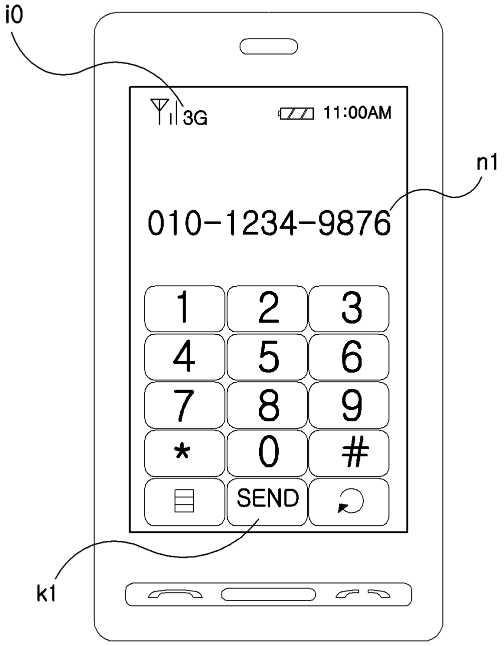
8


i0
3G
11:00AM
c1
3G
2G
b1
UMA

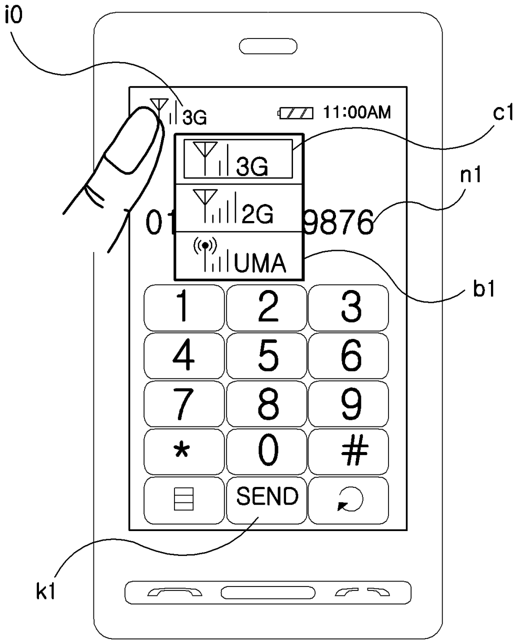
9


시 작
S20
N
안테나 영역이
터치되었는가?
Y
S30
이용가능한 무선통신 채널들에
대한 수신 감도 디스플레이
S40
N
수신감도가
디스플레이된 영역
터치?
Y
S50
터치된 지점에 표시되는 무선
통신 채널을 통화에 이용할
채널로 설정
S70
안테나 영역 표시 변경

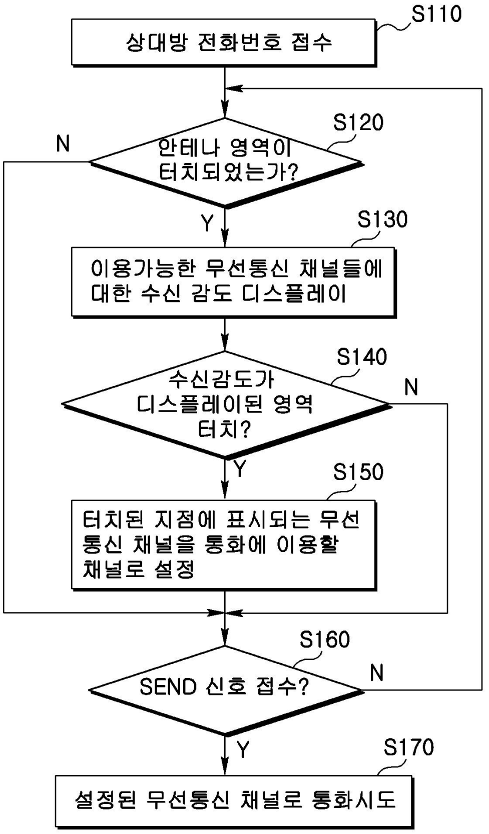
10


i0
3G
11:00AM
n1
010-1234-9876
1
2
3
4
5
6
7
8
9
*
0
#
SEND
k1

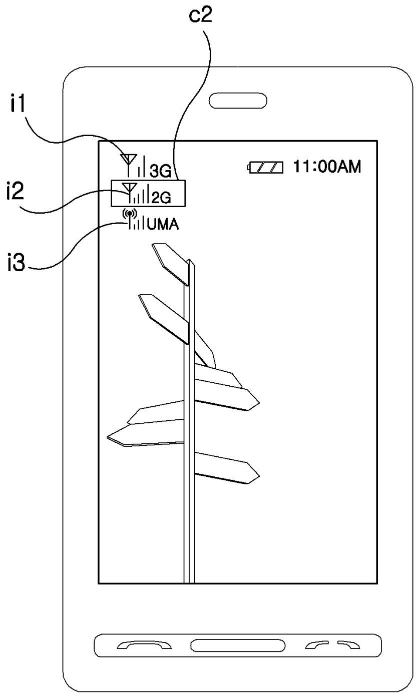
11


i0
3G
11:00AM
c1
3G
2G
UMA
n1
01
9876
b1
1
2
3
4
5
6
7
8
9
*
0
#
SEND
k1

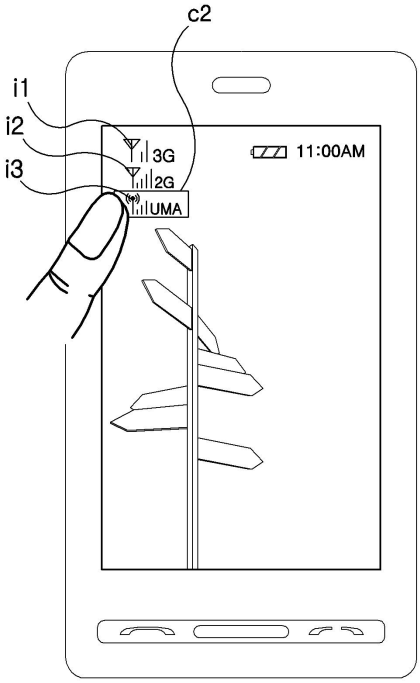
12


S110
상대방 전화번호 접수
S120
안테나 영역이 터치되었는가?
N
Y
S130
이용가능한 무선통신 채널들에 대한 수신 감도 디스플레이
S140
수신감도가 디스플레이된 영역 터치?
N
Y
S150
터치된 지점에 표시되는 무선통신 채널을 통화에 이용할 채널로 설정
S160
SEND 신호 접수?
N
Y
S170
설정된 무선통신 채널로 통화시도

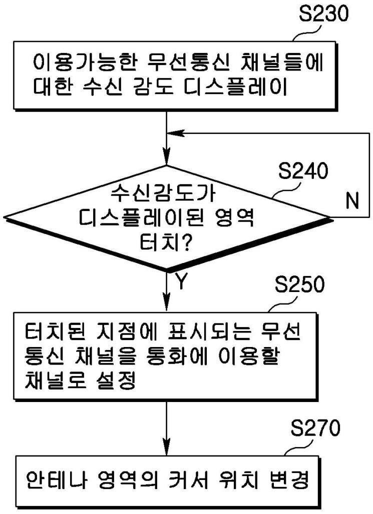
13


c2
i1
i2
i3
3G
2G
UMA
11:00AM

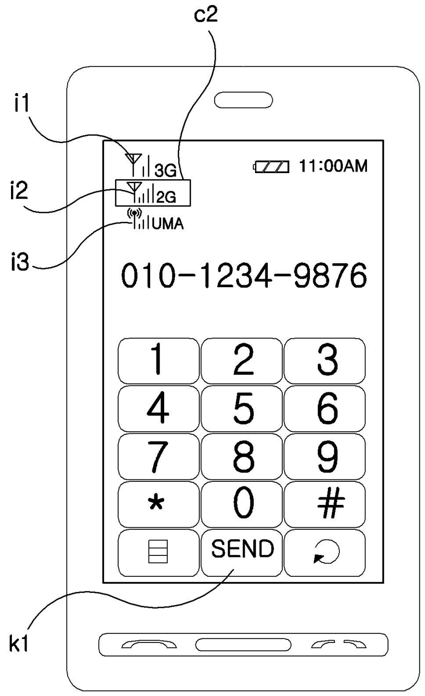
14


c2
i1
i2
i3
3G
2G
UMA
11:00AM

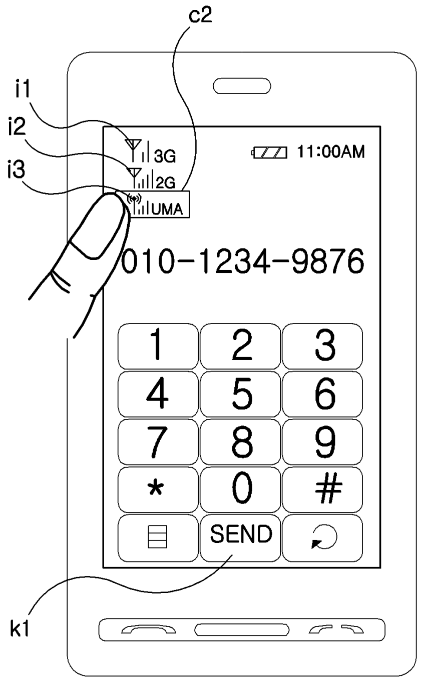
15


S230
이용가능한 무선통신 채널들에 대한 수신 강도 디스플레이
S240
수신감도가 디스플레이된 영역 터치?
N
Y
S250
터치된 지점에 표시되는 무선통신 채널을 통화에 이용할 채널로 설정
S270
안테나 영역의 커서 위치 변경

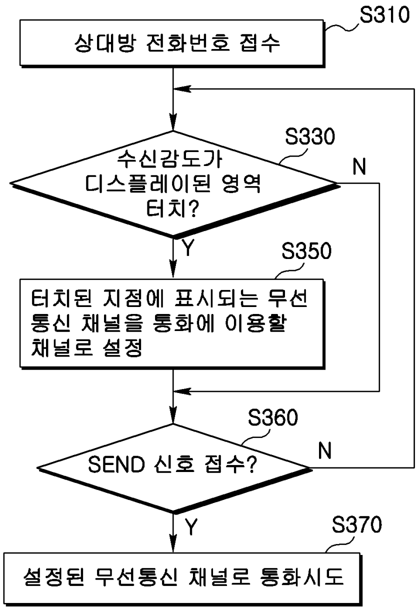
16


c2
i1
i2
i3
3G
2G
UMA
11:00AM
010-1234-9876
1
2
3
4
5
6
7
8
9
*
0
#
SEND
k1

17


c2
i1
i2
i3
3G
2G
UMA
11:00AM
010-1234-9876
1
2
3
4
5
6
7
8
9
*
0
#
SEND
k1

18



S310
상대방 전화번호 접수
S330
수신감도가 디스플레이된 영역 터치?
N
Y
S350
터치된 지점에 표시되는 무선통신 채널을 통화에 이용할 채널로 설정
S360
SEND 신호 접수?
N
Y
S370
설정된 무선통신 채널로 통화시도