

[0060] As shown in a circuit diagram of FIG. 5, the illustrated foldable portable telephone set 10 comprises an antenna 104, a radio frequency (RF) circuit 105, a modem circuit 106, a baseband processing circuit 107, a codec circuit 108, the control portion 109, the microphone 16, the console portion 12, and first through third magnetic sensors (Hall elements) 111a, 111b, and 111c for detecting a position of the display portion unit 32. Those respective function portions are packed in the lower unit 20.

[0061] The above-mentioned control portion 109 comprises a rotation angle detecting portion 112, an opening and closing detecting portion 113, a display control portion 114, an image processing circuit 115, and a camera input/output control circuit 116. The rotation angle detecting portion 112 decides a rotation angle (a rotation position) of the display portion unit 32 on the basis of outputs of the first through the third magnetic sensors 111a to 111c to produce a rotation angle detected signal. The opening and closing detecting portion 113 detects an opening and closing state of the upper unit 30 including the display portion unit 32 with respect to the lower unit 20. The display control portion 114 performs control for display of an image signal from the image processing circuit 115. In addition, the display control portion 114 performs display switching of the display portion 11 and the sub-display unit 19 in response to an output of the opening and closing detecting portion 113. The image processing circuit 115 performs an image processing in accordance with a rotation operation of the display portion unit 32 and a camera control operation. Connected to the front camera portions 17a, 17b and the rear camera portion 18, the camera input/output control circuit 116 performs a camera input/output control in accordance with the rotation angle detected signal of the display portion unit 32.

[0062] The RF circuit 105 comprises a receiving circuit, a transmitting circuit, and a frequency synthesizer which are not shown. The console portion 12 comprises a known transmission key, a conversion key for alphabet/kana (Japanese syllabary)/kanji (Chinese characters)/numeral, an on/off key for a power supply, a direction indication key (a scroll key) for carrying out cursor operation, a key for performing on/off of the camera, and so on.

[0063] The foldable portable telephone set 10 according to the first embodiment of this invention further comprises the speaker 15, the display portion (a liquid crystal display (LCD) or an electroluminescence (EL) element) 11 serving as a main screen, and the sub-display unit 19.

[0064] Referring to FIG. 6, description will be made as regards the above-mentioned first through third magnetic sensors 111a to 111c for detecting a posture (the rotation angle, the rotation position) of the display portion unit 32 according to the first embodiment of this invention. FIG. 6 is a rear schematic view for use in describing an arrangement of the first through the third magnetic sensors 111a to 111c used in the foldable portable telephone set 10 according to the first embodiment of this invention.

[0065] As shown in FIG. 6, the display portion unit 32 has the rear face 32b in which a magnet MG is disposed. On the other hand, the supporting portion unit 34 has the front face 34b in which the first through the third magnetic sensors 111a to 111c are disposed.

[0066] It will be assumed that the display portion 11 is put into the lengthwise state (FIG. 2A). In this event, the magnet

MG and the first magnetic sensor 111a are opposite to each other as shown in FIG. 6. That is, by detecting magnetism of the magnet MG by the first magnetic sensor 111a, it is possible to detect that the display portion 11 is put into the lengthwise state.

[0067] It will be assumed that the display portion 11 is put into the oblong state (FIG. 2B) by rotating and sliding the display portion unit 32 from the state shown in FIG. 6 counterclockwise CCW by about 90 degrees by the above-mentioned rotating and sliding mechanism 40. Under the circumstances, the magnet MG and the second magnetic sensor 111b are opposite to each other. That is, by detecting magnetism of the magnet MG by the second magnetic sensor 111b, it is possible to detect that the display portion 11 is put into the oblong state where the display portion 11 is rotated counterclockwise by about 90 degrees with respect to the lengthwise state.

[0068] It will be assumed that the display portion 11 is put into the oblong state (FIG. 2C) by rotating and sliding the display portion unit 32 from the state shown in FIG. 6 clockwise CW by about 90 degrees by the above-mentioned rotating and sliding mechanism 40. Under the circumstances, the magnet MG and the third magnetic sensor 111c are opposite to each other. That is, by detecting magnetism of the magnet MG by the third magnetic sensor 111c, it is possible to detect that the display portion 11 is put into the oblong state where the display portion 11 is rotated clockwise by about 90 degrees with respect to the lengthwise state.

[0069] Although the rotation angle position of the display portion unit 32 is detected using the magnetic sensors in the first embodiment of this invention, of course, detection of the rotation angle portion may not be restricted them. For instance, other sensors such as reed switches, optical sensors, or the like may be used in lieu of the magnetic sensors.

[0070] In a folded state where the display face 32a of the upper unit 30 is opposite to the lower unit 20 as shown in FIGS. 1A and 1B, the foldable portable telephone set 10 becomes compact so that the whole of the foldable portable telephone set 10 is convenient to carry with it in the similar manner in a folded state of a conventional foldable portable telephone set. In this event, by detecting opening and closing by the opening and closing detecting portion 113, the display control portion 114 controls the display portion 11 and the sub-display unit 19. More specifically, the display control portion 114 controls to display information on the display portion 11 when the upper unit 30 is opened with respect to the lower unit 20. The display control portion 114 controls to display information having a minimum range on the sub-display unit 19 when the upper unit 30 is closed with respect to the lower unit 20. When the upper unit 30 is opened with respect to the lower unit 20, it is possible to speak over using the microphone 16 and the speaker 15.

[0071] The display portion 11 is put into the oblong state when the display portion unit 32 is rotated from the state shown in FIG. 2A counterclockwise CCW by about 90 degrees in the manner as shown in FIG. 2B. In addition, the display portion 11 is put into the oblong state when the display portion unit 32 is rotated from the state shown in FIG. 2A clockwise CW by about 90 degrees in the manner as shown in FIG. 2C.

[0072] In a case where the display portion unit 32 is put into such a position relationship, the above-mentioned rota-