identical to those of the human interaction systems according to the first embodiment of the invention so that detailed description thereof is omitted.

Third Embodiment

[0041] FIG. **4** is a front view of human interaction systems using kinesthetic feedback according to a third embodiment of the present invention. Referring to FIG. **4**, the human interaction systems according to the fourth embodiment of the invention use flexible displays **130** and **230**. The configurations of the human interaction systems **130** and **230** according to the third embodiment of the invention are similar to those of the human interaction systems **110** and **210** according to the first embodiment of the invention. However, the flexible displays **130** and **230** make a motion completely different from those of the terminals **110**, **120**, **210** and **220**, and thus the flexible displays **130** and **230** have a configuration corresponding thereto.

[0042] The flexible displays **130** and **230** are driven by a plurality of wires or shape memory alloy (SMA) strips provided at one side of a display unit displaying images.

[0043] The driver **300** according to the third embodiment of the invention is used for the same purpose and effect as those of the driver **300** according to the first embodiment of the invention and uses a DC motor or an SMA to drive the wires or SMA strips for operating the flexible displays **130** and **230**.

[0044] Each of the flexible displays **130** and **230** includes a plurality of sensors **400** which are arranged at one side thereof, preferably, a mainly bent side of the flexible display, and measure a bending direction and magnitude of the flexible display. Any sensor can be used if it can perform this operation. Preferably, a bending sensor using resistance or an optical fiber function is used.

[0045] The converter **500** and the communication module **600** according to the third embodiment of the invention are similar to those of the human interaction systems according to the first or second embodiment of the present invention so that detailed explanations thereof are omitted.

Modified Embodiment

[0046] The human interaction systems **100** and **200** using kinesthetic feedback according to the present invention can be also applied to a PDP, PMP, notebook computer or industrial equipment that can be operated according to intercommunication in addition to the devices according to the first, second and third embodiments of the invention. For example, hinge angles of notebook computers connected to each other can be mutually controlled according to the aforementioned principle. In the same manner, hinges of monitors of desktop PCs connected to each other can be controlled through the aforementioned principle.

[0047] <Method of Operating Human Interaction Systems Using Kinesthetic Feedback>

[0048] FIG. **5** is a flowchart showing a method of operating the human interaction systems using kinesthetic feedback according to the present invention. Referring to FIGS. **1** and **5**, a user applies a force to the first human interaction system **100** to handle the first human interaction system **100** in step S**100**.

[0049] The sensor **400** included in the first human interaction system **100** measures motion information such as motion magnitude and path of the first human interaction system **100** handled by the user in step S**200**. The sensor **400** may use a force sensor, a torque sensor, a motion sensor, an acceleration measurement sensor or a velocity sensor because the first human interaction system **100** can make various motions according to its type.

[0050] The motion information of the first human interaction system, measured by the sensor **400**, is converted into an electric signal for communication in step S**300**.

[0051] The electric signal is transmitted to the second human interaction system **200** in step S**400**.

[0052] The electric signal received by the second human interaction system **200** is converted into a motion signal for driving the second human interaction system **200** in step S**500**.

[0053] The second human interaction system **200** is controlled such that the second human interaction system **200** makes a motion having a magnitude and path corresponding to the received motion signal of the first interaction device **100**. In this manner, Primary interaction of the first and second human interaction systems **100** and **200** is accomplished.

[0054] When the user continuously handles the first human interaction system **100**, steps S**100** through S**600** are repeated to allow the second human interaction system **200** to make the same motion as that of the first human interaction system **100**. Unless the second human interaction system **200** is obstructed by an obstacle or an external force is applied to the second human interaction system **200**, the first human interaction system **100** does not generate additional feedback. Accordingly, the user can confirm that the second human interaction system **200** smoothly operates. An operating method when the second human interaction system **200** is obstructed by an obstacle or an external force is applied to the second human interaction system **200** will now be explained.

[0055] An external force or an obstacle which counteracts the motion of the first human interaction system **100** is applied to the second human interaction system **200** while the first human interaction system **100** is handled such that the second human interaction system **200** makes the same motion as that of the first human interaction system **100** in step S**710**.

[0056] The sensor **400** of the second human interaction system **200** measures motion information such as motion magnitude and path of the second human interaction system **200**, determined by the external force applied to the second human interaction system **200**, in step S**720**.

[0057] The motion information is converted into an electric signal for communication in step S**730**.

[0058] The electric signal is transmitted to the first human interaction system **100** from the second human interaction system **200** in step S**740**.

[0059] The electric signal received by the first human interaction system **100** is converted into a motion signal corresponding to the external force applied to the second human interaction system **200** in step S**750**. Here, information on motion of the first human interaction system **100**, generated by the user, can be compared to the motion information on the external force applied to the second human interaction system **200** in step S**751**.

[0060] Kinesthetic feedback corresponding to the motion information on the external force applied to the second human interaction system **200** is provided to the user from the first human interaction system **100** in step S**760**. Here, the first human interaction system **100** does not generate kinesthetic feedback corresponding to simple vibration such as conven-