

[0060] The output unit **150** is configured to provide outputs in a visual, audible, and/or tactile manner (e.g., audio signal, video signal, alarm signal, vibration signal, etc.). The output unit **150** may include the display unit **151**, an audio output module **152**, an alarm unit **153**, and the like.

[0061] The display unit **151** may display information processed in the mobile terminal **100**. For example, when the mobile terminal **100** is in a phone call mode, the display unit **151** may display a User Interface (UI) or a Graphic User Interface (GUI) associated with a call or other communication (such as text messaging, multimedia file downloading, etc.). When the mobile terminal **100** is in a video call mode or image capturing mode, the display unit **151** may display a captured image and/or received image, a UI or GUI that shows videos or images and functions related thereto, and the like.

[0062] Meanwhile, when the display unit **151** and the touch pad are overlaid in a layered manner to form a touch screen, the display unit **151** may function as both an input device and an output device. The display unit **151** may include at least one of a Liquid Crystal Display (LCD), a Thin Film Transistor-LCD (TFT-LCD), an Organic Light Emitting Diode (OLED) display, a flexible display, a three-dimensional (3D) display, or the like. Some of them may be configured to be transparent to allow viewing of the exterior, which may be called transparent displays. A typical transparent display may be, for example, a TOLED (Transparent Organic Light Emitting Diode) display, or the like. The mobile terminal **100** may include two or more display units (or other display means) according to its particular desired embodiment. For example, the mobile terminal may include both an external display unit and an internal display unit.

[0063] The touch screen may be configured to detect a touch input pressure as well as a touch input position and a touch input area. The touch screen may detect a user's touch and manipulation such as dragging, scrolling, flicking, or the like by interworking with the sensing unit **140**.

[0064] A proximity sensor **141** may be disposed within or near the touch screen. The proximity sensor **141** is a sensor for detecting the presence or absence of an object relative to a certain detection surface or an object that exists nearby by using the force of electromagnetism or infrared rays without a physical contact. Thus, the proximity sensor **141** has a considerably longer life span compared with a contact type sensor, and it can be utilized for various purposes.

[0065] Examples of the proximity sensor **141** may include a transmission type photo sensor, a direct reflection type photo sensor, a mirror-reflection type photo sensor, an RF oscillation type proximity sensor, a capacitance type proximity sensor, a magnetic proximity sensor, an infrared proximity sensor, and the like.

[0066] The operational principle of the RF oscillation type proximity sensor, among the implementable proximity sensors, will be described as an example. When an object approaches the sensor detection surface in a state that an RF (Radio Frequency) of a static wave is oscillated by an oscillation circuit, the oscillation amplitude of the oscillation circuit is attenuated or stopped, and such a change is converted into an electrical signal to detect the presence or absence of an object. Thus, even if any material other than metallic one is positioned between the RF oscillation proximity sensor and the object, a proximity switch can detect the object intended to be detected without an interference by the object.

[0067] Without the proximity sensor **141**, if the touch screen is an electrostatic type, the approach of a pointer (stylus) can be detected based on a change in a field according to the approach of the pointer.

[0068] Thus, although the pointer is not actually brought into contact with the touch screen but merely positioned close to the touch screen, the position of the pointer and the distance between the pointer and the touch screen can be detected. In the following description, for the sake of brevity, recognition of the pointer positioned to be close to the touch screen will be called a 'proximity touch', while recognition of actual contacting of the pointer on the touch screen will be called a 'contact touch'. In this case, when the pointer is in the state of the proximity touch, it means that the pointer is positioned to correspond vertically to the touch screen.

[0069] By employing the proximity sensor **141**, a proximity touch and a proximity touch pattern (e.g., a proximity touch distance, a proximity touch speed, a proximity touch time, a proximity touch position, a proximity touch movement state, or the like) can be detected, and information corresponding to the detected proximity touch operation and the proximity touch pattern can be outputted to the touch screen.

[0070] The audio output module **152** may convert and output as sound audio data received from the wireless communication unit **110** or stored in the memory **160** in a call signal reception mode, a call mode, a record mode, a voice recognition mode, a broadcast reception mode, and the like. Also, the audio output module **152** may provide audible outputs related to a particular function performed by the mobile terminal **100** (e.g., a call signal reception sound, a message reception sound, etc.). The audio output module **152** may include a speaker, a buzzer, or other sound generating device.

[0071] The alarm unit **153** (or other type of user notification means) may provide outputs to inform about the occurrence of an event of the mobile terminal **100**. Typical events may include call reception, message reception, key signal inputs, a touch input etc. In addition to audio or video outputs, the alarm unit **153** may provide outputs in a different manner to inform about the occurrence of an event. For example, the alarm unit **153** may provide an output in the form of vibrations (or other tactile or sensible outputs). When a call, a message, or some other incoming communication is received, the alarm unit **153** may provide tactile outputs (i.e., vibrations) to inform the user thereof. By providing such tactile outputs, the user can recognize the occurrence of various events even if his mobile phone is in the user's pocket. Outputs informing about the occurrence of an event may be also provided via the display unit **151** or the audio output module **152**.

[0072] The memory **160** (or other storage means) may store software programs or the like used for the processing and controlling operations performed by the controller **180**, or may temporarily store data (e.g., a phonebook, messages, still images, video, etc.) that have been inputted or which are to be outputted. In addition, the memory **160** may store data regarding various patterns of vibrations and audio signals to be outputted when a touch is applied to the touch screen.

[0073] The memory **160** may include at least one type of storage medium including a Flash memory, a hard disk, a multimedia card, a card-type memory (e.g., SD or DX memory, etc), a Random Access Memory (RAM), a Static Random Access Memory (SRAM), a Read-Only Memory (ROM), an Electrically Erasable Programmable Read-Only