

# Overview of “LifeTouch” Series Android Tablets

OHNUKI Takashi, HANAOKA Taira, ENOMOTO Koji, HONDA Kotaro

## Abstract

The “LifeTouch” tablet series can be used easily, featuring a lightweight body, touch panel and Android OS. Advantages include providing the necessary security functions for business use and supporting for customizations such as the addition of other functions or a batch default setup.

Three products have been produced according to the different usage scenes. The “LifeTouch L,” which comes with a large 10.1-inch LCD screen, features a thin and lightweight body, it measures 7.99 mm thick and weighs just 540 g. The “LifeTouch B” has a 7-inch screen and can be held with one hand, it is waterproof and could be utilized in various business fields. The “LifeTouch W” features a book-style dual screen, which is adaptable for unique usage scenes.

## Keywords

LifeTouch, tablet, security, customization, thin and lightweight  
Android, touch panel, dual screen

## 1. Introduction

The “LifeTouch” series of tablets are smart devices that can be used easily, featuring a lightweight body, long battery operation and touch panel, as well as offering the intuitive operation of the Android OS.

These LifeTouch tablets are intended for business uses such as mobile work, presentations, industrial applications in manufacturing plants and also provide services to corporations as dedicated terminals. The LifeTouch tablets are different from ordinary tablets available on the market as they provide additional functions, such as security and communication functions necessary for commercial applications in a business environment. They also support group automated installation, as well as respond to customization requirements, which are different for each business.

The LifeTouch tablet series product lineup includes three products that can be selected according to the usage style. The first one is the “LifeTouch L” tablet that features a 10.1-inch LCD, intended for mobile work or presentations, thanks to the visibility of its large screen with a wide viewing angle and superior operability. The second one is the “LifeTouch B” tablet with a 7-inch LCD that can be held in one hand and features both superior visible and portable size. It is waterproof and dustproof, making it suitable for use outside offices or in manufacturing plants. The third one is the “LifeTouch W” book-

style tablet that features two display screens, which can be folded and carried around just like a notepad or a book.

The concept and features of the respective LifeTouch products are introduced in this paper.

## 2. “LifeTouch L” Model for Business Features Large and Easily Visible Screen

### 2.1 Product Concept

The LifeTouch L business model ( **Photo 1** ) is a smart



Photo 1 LifeTouch L.

## Overview of “LifeTouch” Series Android Tablets



Photo 2 Example of style of usage at meetings.

device intended for supporting business applications that require an easily visible, attractive and large screen for displaying information. The large 10.1-inch screen makes it suitable for mobile work involving the presentation of materials, browsing emails in a meeting or out of the office, sales work involving face-to-face presentations and customer service or for the display of signage.

The slim and lightweight body, in addition to the large screen with a wide view angle and a long-lasting battery, offers superior mobility to provide portability and operability of a tablet, while it is still capable of supporting the work-style described above.

### 2.2 Large Screen and Wide Angle of View LCD

The 1,280 × 800 pixel high-definition 10.1-inch LCD is mounted as the display. A strong brightness and wide viewing angle IPS liquid crystal was adopted for the tablet, enabling it to display beautiful images to each person viewing from a variety of angles at the same time, making it suitable for face-to-face interactions with customers at storefronts (Photo 2).

### 2.3 Slim and Lightweight Driven by Long Lasting Battery

The portability, which is essential for smart devices, was contemplated in order to achieve this slim and lightweight body, which measures only 7.99 mm thick and weighs only about 540 g, even though it is equipped with a 10.1-inch display.

The slim but lightweight body was created while maintaining rigidity by separating the side and the back surfaces of the

frame structure, integrating the side surfaces through the casting of a resin form without any joining seams and using a single aluminum plate to form the back surface. The flat shape means it is easy to store and carry the tablet in a business bag where it can be quickly removed and used immediately.

Furthermore, a thin 7,710 mAh large capacity lithium-polymer battery has been incorporated to achieve up to 13 hours of battery operations (for web browsing; according to our internal measurement method). This makes it possible to work in the field or in environments that do not provide a power source for long periods of time.

### 2.4 Advanced Specifications

The LifeTouch L is characterized by a slim and lightweight body, driven by a long-lasting battery, while it also features advanced specifications, with an emphasis on performance and connectivity.

- **High performance platform**

A high performance dual core OMAP4460 1.5 GHz was adopted for the SoC (System on a Chip) and Android 4.0 was adopted as the operating system to provide a speedy and delightful operating environment.

- **Wireless LAN**

The IEEE 802.11a/b/g/n is supported to respond to a wide range of network environments. Furthermore, the 2.4 GHz band and the 5 GHz band of the IEEE 802.11n are both supported.

- **Expandability**

The tablet incorporates a number of expansion interfaces, Micro HDMI terminal for connecting to a projector, USB terminal (in the interest of keeping the tablet thin, a special terminal is provided on the tablet for connecting a USB host cable for USB connections) for connecting supported devices such as a keyboard, micro SDHC card slot and Bluetooth, etc. The possible usage of the tablet expands when connected to a variety of peripheral devices.

- **Camera**

A 1.2 M pixel front facing camera and a 5 M pixel rear camera (equipped with flash and auto focus functions) have been incorporated and can be used for video conferencing or taking photographs both indoors and outdoors.

- **Security**

A variety of security functions have been incorporated into the tablet for business purposes. The tablet has in-

herited the superior security functions of the LifeTouch series, which prevents unauthorized use and provides enhanced measures against loss and facilitates safe connection functions for networks, including VPN.

### 3. Compact, Lightweight and Very Portable “LifeTouch B” Series

#### 3.1 Product Concept

The LifeTouch B series of tablets (LifeTouch B ( **Photo 3** ) and LifeTouch B Plus ( **Photo 4** )) are smart devices with a 7-inch LCD, which support business use in stores, offices and sales activities both in/out of the office thanks to clear



Photo 3 LifeTouch B.



Photo 4 LifeTouch B Plus.

visibility and excellent portability.

Furthermore, because of the dustproofing and waterproofing features they can be used for inspections in manufacturing plants or warehouses, as well as outdoors.

#### 3.2 Rich Functions in a Compact Body

Specifications suitable for the operation of work site duties outdoors are all integrated condensed in a compact body that can be held in one hand.

- **Compact and lightweight**

Easily portable and operable, since it is a size that can be carried in one hand.

- **Battery replacement**

The battery is removable and easy to replace whenever the battery drains, which offers users the option of carrying multiple batteries as replacements to continue using the tablet when away from a charging point for long periods of time.

- **Security functions required for business**

Just like LifeTouch L, the LifeTouch B series of tablets feature various security functions. They can be used for business with peace of mind, as they feature functions that prevent unauthorized use, as well as provide measures against loss, while facilitating safe connection functions for networks, including VPN support.

- **3G model**

A model supporting the 3G connectivity is included in the product line of LifeTouch B Plus, therefore the tablet can be used for business purposes by connecting to a network from anywhere, while out in the field.

- **Wireless LAN handover**

Supports a wireless LAN handover feature that switches over automatically to an optimum wireless LAN access point, making it possible to use the tablet while moving freely across environments, including those with multiple wireless LAN access points, such as inside buildings.

- **Expandability with consideration for usability**

It can link up with other devices, such as digital cameras or PCs with the use of the full size SD card slot or bar code readers using the USB host function.

- **Stylish and user-friendly design**

A “Flat Surface Design” that eliminates unevenness on both the front and reverse side surfaces was adopted, so that it can be used as an embedded system as well.

The rear camera is positioned at the center of the back’s surface, so it is not covered regardless of whether the

## Overview of “LifeTouch” Series Android Tablets

body is held vertically or horizontally.

A strap hole is also incorporated to allow a strap to be fitted to prevent the body being dropped, enabling the tablet to be used safely with outdoor duties.

### 3.3 Dustproof and Waterproof Features Expand Usage Style

Dustproofing and waterproofing features reduce the risk of malfunctions arising from dust or water ingress when the tablet is used outdoors or in a wet environment.

Furthermore, the LifeTouch B Plus is equipped with a higher level of resilient dustproofing and waterproofing, making it possible to use the tablet in even rougher environments.

- LifeTouch B: IP54 compliant
- LifeTouch B Plus: IP65/IP67 compliant

## 4. Book-Style Dual Screen “LifeTouch W”

### 4.1 Product Concept

The LifeTouch W ( **Photo 5** ) is a dual screen smart device that can be folded shut, just like a book or a pad, making this large screen tablet portable. The two screens can be used as a single spread screen or they can be used as two individual screens to use applications and services.

### 4.2 Book-style / Dual Screen Application

The LifeTouch W features a unique book-style shape and dual screen.



Photo 5 LifeTouch W.

- **Easily portable folding shape**

The LifeTouch W can be opened to an arbitrary angle (Photo 5) and features a shape like holding a book.

- **Large screen stores away compactly**

The tablet features a display area equivalent to a 10-inch tablet when opened, with the incorporation of two 7-inch LCDs, which can be stored away in a compact manner by folding the tablet just like a pad for transporting. Furthermore, since the liquid crystal surfaces are folded inside, there would be no concerns for the display being scratched whenever the tablet is carried in a bag.

- **Two applications can be used simultaneously**

Each of the two screens can be used to display and use applications on each, individually.

For instance, one screen can be used to browse the web, while the other screen is used for editing emails, making it possible to work efficiently, without the need of switching between two applications on a single screen as with a smart phone for example.

- **Framework and SDK makes application development easy**

Using the dual screen framework and SDK (Software Development Kit) for LifeTouch W makes it possible to develop applications that take advantage of the dual screens. Furthermore, existing single screen applications can be operated on the overall display comprised of two screens by modifying just a section of the definition file for the application.

## 5. Conclusion

The functions and LifeTouch products line-up will continue to be enhanced in the future, so that these smart devices can be used for commercial applications of various businesses, as well as dedicated terminals for cloud services intended for corporate customers.

\*Life Touch is a registered trademark in Japan owned by NEC Corporation.

\*Android is a trademark or registered trademark of Google Inc.

\*IPS stands for In Plane Switching LCD and is a registered trademark of Japan Display Inc. in Japan.

\*OMAP is a trademark or registered trademark of Texas Instruments Inc.

\*HDMI is a trademark or registered trademark of HDMI Licensing, LLC in the U.S. and other countries.

\*SD and SDHC are trademarks of SD-3C, LLC.

\*Bluetooth is a registered trademark of Bluetooth SIG, Inc. (USA).

## Authors' Profiles

### **OHNUKI Takashi**

Manager  
Cloud Devices Division  
Personal Solutions Operations Unit

### **HANAOKA Taira**

Manager  
Cloud Devices Division  
Personal Solutions Operations Unit

### **ENOMOTO Koji**

Manager  
Cloud Devices Division  
Personal Solutions Operations Unit

### **HONDA Kotaro**

Manager  
Cloud Devices Division  
Personal Solutions Operations Unit

---

The details about this paper can be seen at the following.

**Related URL:**

**<http://www.nec.com/en/global/prod/smartdevices/>**

---

# Information about the NEC Technical Journal

---

Thank you for reading the paper.

If you are interested in the NEC Technical Journal, you can also read other papers on our website.

## Link to NEC Technical Journal website

Japanese

English

---

## Vol.7 No.3 Smart Device Solutions

Remarks for Special Issue on Smart Device Solutions

NEC Group Paves the Way for Smart Devices

### ◇ Papers for Special Issue

#### Service platforms

Smart Device Management/Security Solutions Regardless of OS or Carrier  
Solutions Supporting the Utilization of Smart Devices: System Introduction Case Studies  
Authentication Solution Optimized for Smart Devices  
“Smart Mobile Cloud” Contributing to the Use of Smart Devices  
“BIGLOBE Cloud Hosting” Supports Building of High Quality Services  
“Contents Director,” Content Distribution Service for Smart Devices  
UNIVERGE Mobile Portal Service: A Smart Device Utilization Platform Optimized for BYOD  
Remote Desktop Software that Supports Usability of Smart Devices  
SystemDirector Enterprise - A Business System Construction Platform to Facilitate Development of Applications Compatible with Smart Devices  
Smart Device Content Distribution Platform Service Using the BIGLOBE Hosting

#### Smart devices

Overview of “LifeTouch” Series Android Tablets  
VersaPro Type VZ - A Windows 8-based, Large-screen Tablet PC  
Development of an Android-based Tablet(Panel Computer series)

#### Solutions

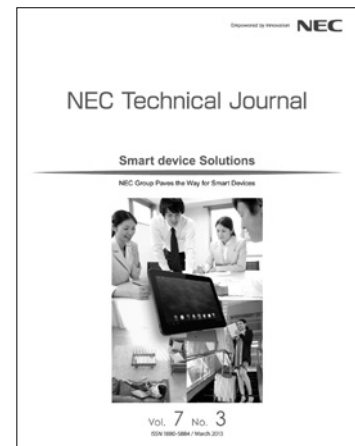
ConforMeeting: A Real-time Conference System Compatible with Smart Devices for Conducting Paperless Meetings  
BusinessView Maintenance Work Solutions Utilizing Smartphones  
Application of the UNIVERGE Remote Consultation Solution to Elderly Care  
Introduction of the GAZIRU Image Recognition Service  
Tablet Concierge- An Ultimate Customer Service Solution -  
Development of a Business Systems Template for Use with Smart Devices  
Introduction of Video Communications Cloud Services Compatible with Multiple Devices

#### Technical researches

Towards a User-Friendly Security-Enhancing BYOD Solution  
Implementing Secure Communications for Business-Use Smart Devices by Applying OpenFlow  
Human-Computer Interaction Technology Using Image Projection and Gesture-Based Input  
Noise Robust Voice UI Technology and Its Applications

### ◇ General Papers

Efforts to Solve the Congestion Problems of Mobile Communications Services during Major Natural Disasters



**Vol.7 No.3**  
**March, 2013**

Special Issue TOP