



Panasonic®

Operating Instructions Basic Guide

Tablet Computer

Model No. **FZ-F1** series

Thank you for purchasing a Panasonic product.

For optimum performance and safety, please read these instructions carefully.

For detailed information about this product, refer to the Reference Manual, which is available by flicking the Start screen to the left, and then tapping **[Online Manual]** in the All apps list. (Download required.)

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Introduction

Handling cautions

General use

- Operating environment

Temperature: Operation: -10 °C to 50 °C (IEC60068-2-1, 2)*¹

Storage: -30 °C to 70 °C

Humidity: Operation: 30 % to 80 % RH (No condensation)

Storage: 30 % to 90 % RH (No condensation)

Even within the above temperature/humidity ranges, operation for a long time in extreme environments, smoking nearby, or operation in places where oil is used or where there is a lot of dust will result in product deterioration and will shorten the product life.

Also, when using the product in cold environments, the product may take longer to start up and battery operation time may be reduced.

If the product is wet in temperatures of 0 °C or below, freeze damage may occur. Make sure to dry off the computer in such temperatures.

*1 Do not directly touch this product with your bare hands when using it in a hot or cold environment.

- Do not place the product in the following areas, as doing so may damage the product.
 - Near electric appliances. The image may be distorted or noise may occur.
- This product is designed to reduce physical shock applied to the LCD and internal electrical components. However, protection against malfunction due to such shock is not guaranteed. As with any portable device, precautions should be taken to avoid any damage.
- When operating the screen using the dedicated stylus (included with certain models and also available as an option), do not firmly press it down. Doing so may damage the dedicated stylus or result in scratches or dents on the screen.

- Do not place objects on the surface of the product or press down hard on the product with sharp objects. The screen surface may get scratched.
- Do not scratch the rear camera, barcode reader, or flash panel.
- Do not use the dedicated stylus when dust or dirt (e.g., oil) is on the screen. Otherwise foreign particles on the screen/dedicated stylus may scratch the screen surface or obstruct operation of the dedicated stylus.
- Use the dedicated stylus only for touching the screen. Using it for any other purpose may damage the dedicated stylus and result in scratches on the screen.
- Confirm the safety and security of software before downloading or installing it on the product. Installing malware or viruses can cause malfunction and the disclosure of any private information stored in the product, or may cause excessive sound volume.
- Turn off the product before removing the SIM card or SD card. Failure to do so can result in data loss or damage to the SIM card, SD card, or product.
- Do not place the product near a television or radio receiver. This may cause television or radio interference.
- Keep the product away from magnets. Failure to do so may cause malfunction.
- It is illegal in many areas to record a call without permission. Always ask the other party for permission before recording a call.
- Follow these instructions and the Reference Manual to avoid any damage to the devices. Carefully read the instruction manuals of the peripheral devices.
 - Use peripheral devices that conform to the product's specifications.
 - Connect to the connectors in the correct direction.
 - If a connector is hard to insert, do not try forcibly. Check its shape, direction, alignment of pins, etc.

Protecting your data

- To prevent accidental loss of data, we recommend that you back up any important data that you store in the product, SIM card, and SD card.
- To prevent the unintended disclosure of private information, always confirm the destination before sending messages, file attachments, or any other communications, such as email.
- Before disposing of the product or handing the product over to a third party, remove the SIM card, SD card, and any other accessories.
- Before disposing of the product or handing the product over to a third party, perform a factory data reset (page 33) to erase any data stored in the product.
- Before using Wi-Fi or Bluetooth features, take appropriate action to secure your data.

Waterproof/dustproof

- The product is waterproof/dustproof when the interface cover and headset jack cover are closed, and the battery and battery cover are attached. Therefore, keep water and dust away from product's internal components, accessories, and optional products.
- To prevent liquids, sand, dust, or any foreign objects from entering the product, always keep the battery cover and battery clean and make sure to firmly close the cover after opening. Take care not to get anything caught between the cover or battery and the product.
- If the product is exposed to water droplets, wipe them off with a dry, soft cloth and shake the product to remove the water droplets. Next, remove the battery cover, and shake the product while holding down the battery so that it does not detach to remove the water. Then, with the battery still attached, wipe off the water droplets on the battery and back side of the battery cover, and dry thoroughly.
- Do not leave any water droplets on the product. Water droplets may cause the micro USB port or headset jack to short circuit, or create smears on the screen.
- If the product is wet, wipe off the moisture before connecting with peripheral devices.

- Do not dry the product with an appliance or heat source such as a microwave oven or dryer.
- Accessories
Do not use in the rain or in very humid places such as bathrooms because the accessories are not waterproof/dustproof. Stop use if they are worn on the body, because the inside may corrode due to humidity from sweat and cause malfunction.

Maintenance

- When cleaning the product, make sure to turn it off.
- When cleaning the product, wipe it with a soft, dry cloth. An alcohol-based disinfectant may be used if necessary.
 - If the product is particularly dirty, thoroughly wring a cloth soaked in water, wipe off the dirt, and then wipe with a dry cloth.
 - Do not clean the product with solvents such as benzene, thinner, or strong alkaline detergent because they may affect the surface of the product.

Battery

- The battery is a consumable item. Depending on the usage conditions, it may swell as it reaches the end of its life. When the typical battery life of approximately one year or about 500 charge cycles is exceeded, the battery deteriorates. If the battery begins to swell, or the amount of time it can be used after a full charge becomes dramatically shorter, the battery should be replaced with a new one. Contact your technical support representative.
- Do not touch the terminals of the battery. Failure to observe this may cause poor contact.
- When the battery is left installed in the product, it discharges electricity gradually in small amounts even if the product's power is off. If left for a long period (several months or more), the battery will over discharge and its performance may deteriorate.
- Store the battery in environments with an ambient temperature of -20 °C to 35 °C. If the battery is stored in other environments, battery performance and battery life may be reduced.
- When storing or transporting the battery, make sure that the battery's terminals do not become dirty and that no foreign objects or debris become attached to the battery's terminals.

- If battery charging is not completed after the specified charging time has passed, remove the battery from the product. The battery protection device may be damaged.
- You cannot charge an installed battery if it is not recognized by the product. Make sure that you use the specified battery.
- Dispose properly in compliance with local waste regulations.

Trademarks

- The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Panasonic Corporation is under license.
- microSDXC Logo is a trademark of SD-3C, LLC.
- The N-Mark is a trademark or registered trademark of NFC Forum, Inc. in the United States and in other countries.
- Wi-Fi, the Wi-Fi logo, the Wi-Fi CERTIFIED logo and Wi-Fi CERTIFIED are trademarks or registered trademarks of Wi-Fi Alliance.
- Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- All other trademarks identified herein are the property of their respective owners.



Terms and illustrations in this document

- Panasonic Corporation and/or its affiliates are referred to collectively as “we” or “Panasonic”.
- This product supports microSD, microSDHC, and microSDXC memory cards. In this document, the term “SD card” is used as a generic term for any supported memory card.
- This product supports Micro SIM cards (certain models only). In this document, the term “SIM card” is used as a generic term for any supported SIM card.
- Some illustrations in this document may look different from the actual product. Also, the details of the descriptions may vary due to differences between the software versions or automatic updates of some software.
- Information in this document is subject to change without notice.
- For the latest information about optional products, refer to the product catalogs, etc.

Disclaimers

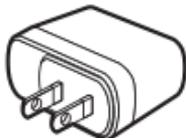
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Getting Started

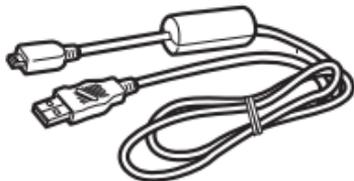
Confirming the included items

If any items are missing, please contact your technical support representative.

- **Main unit** ×1
- **Battery (Model number FZ-VZSUN110U or FZ-VZSUN120U)** ×1
 - In general, FZ-VZSUN110U is used in the illustrations, but FZ-VZSUN120U is used in some illustrations.
- **Operating Instructions - Read Me First** ×1
- **AC adaptor (Model number FZ-AAE184E)** ×1

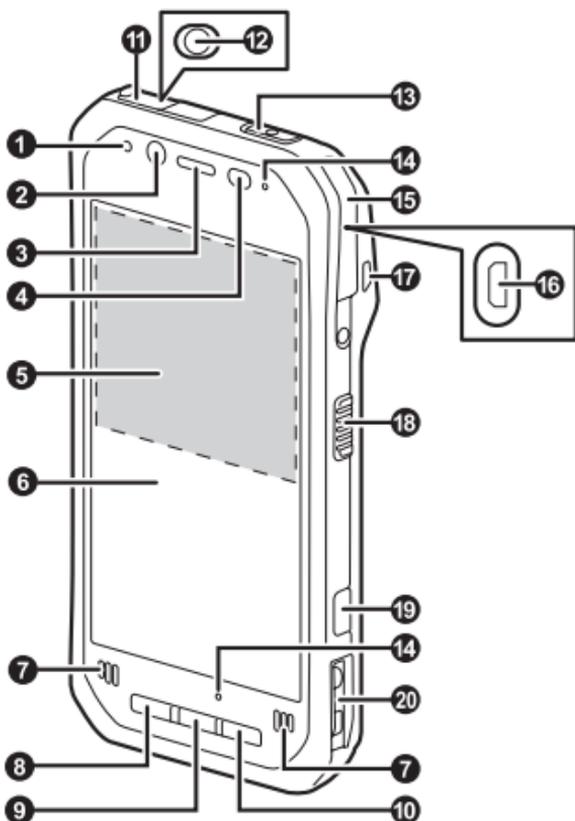


- Connect only the supplied USB connection cable.
 - The shape of the power plug varies depending on your country.
- **USB connection cable** ×1



Description of parts

Front view



1 Indicator

Orange, lit: Battery is charging

Green, lit: Battery charging is complete

Red, lit: Battery level is 10 % or less of a full charge

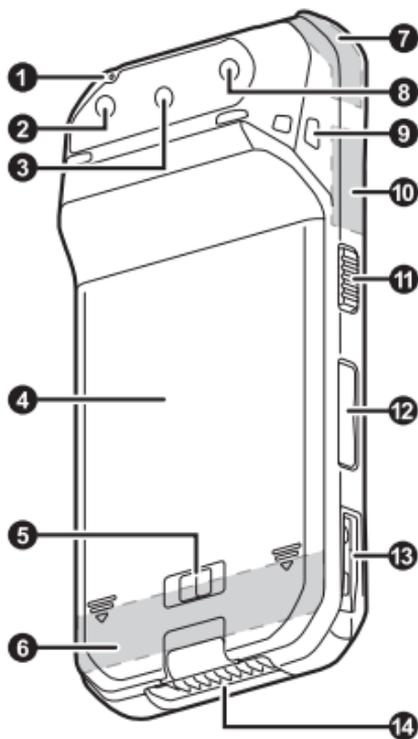
2 Front camera

3 Earpiece

- 4 **Ambient light sensor, proximity sensor**
The ambient light sensor automatically adjusts the screen brightness. The proximity sensor prevents accidental operations on the touch panel during phone calls.
- 5 **NFC antenna** (internal)
When using an NFC card or other NFC device, touch the card/device to this area of the unit.
- 6 **Display (touch panel)**
Can also be operated while using gloves (glove touch mode).
- 7 **Speaker**
- 8 **Back button**
Press to return to the previous screen.
- 9 **Start button**
Press to display the Start screen.
- 10 **Search button**^{*1}
Press to search the web.
- 11 **Headset jack cover** (page 15)
- 12 **Headset jack**
- 13 **Power button** (page 28)
- 14 **Microphone**
- 15 **Interface cover** (page 16)
- 16 **micro USB port**
- 17 **Strap attachment hole**
- 18 **Side button**^{*1}
- 19 **Camera button**
- 20 **Cradle rail**
Used when connecting the unit to an optional cradle, etc.

*1 The registered function can be changed. See the Reference Manual.

Rear view



- ① Microphone
- ② Rear camera
- ③ Barcode reader
- ④ Battery cover
- ⑤ Battery lock lever
- ⑥ Cellular antenna (internal)
- ⑦ GPS antenna (internal)
- ⑧ Flash
Can be used when taking pictures.
- ⑨ Strap attachment hole

⑩ **Wi-Fi, Bluetooth antenna** (internal)

⑪ **Side button**^{*1}

⑫ **Volume buttons**

⑬ **Cradle rail**

Used when connecting the unit to an optional cradle, etc.

⑭ **Expansion bus connector**

Used when connecting an optional cradle, etc. or for other future expansion options.

*1 The registered function can be changed. See the Reference Manual.

Opening and closing the headset jack cover

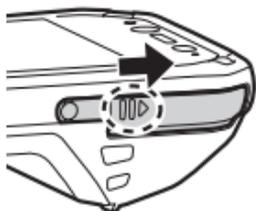
Pull back at the protrusion of the headset jack cover with your fingertip. When closing, make sure the cover is closed firmly.

IMPORTANT

- Observe the following to ensure the waterproof and dustproof performance of the unit.
 - Make sure the headset jack cover is securely closed when the headset jack is not being used.
 - When closing the headset jack cover, make sure there is no debris lodged in and around the cover.

Opening and closing the interface cover

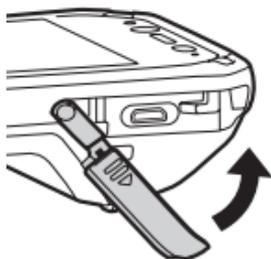
Opening the interface cover



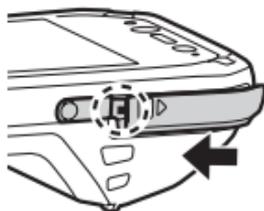
1. Slide in the direction of the arrow at the protrusion (circled in the illustration above) with your fingertip.
2. Pull back the cover and rotate it downward.



Closing the interface cover



1. Rotate the cover upward and insert it to its original position.
2. Firmly slide in the direction of the arrow until the red area (circled in the illustration above) of the cover is no longer visible.



IMPORTANT

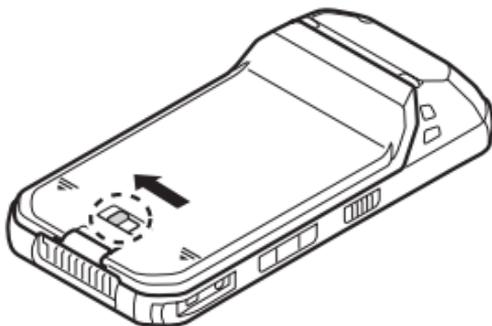
- Observe the following to ensure the waterproof and dustproof performance of the unit.
 - Make sure the interface cover is securely closed and locked when the micro USB port is not being used.
 - When closing the interface cover, make sure there is no debris lodged in the gasket that seals the cover.

Removing and attaching the battery cover

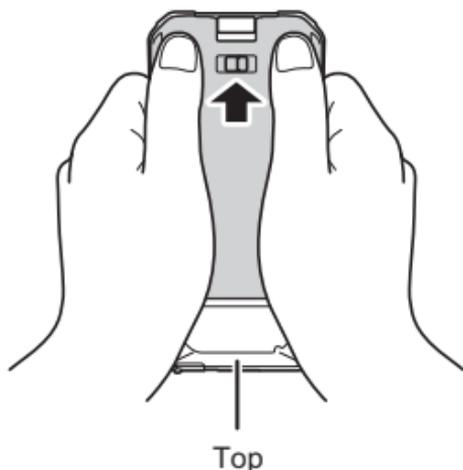
For FZ-VZSUN110U and FZ-VZSUN120U

Removing the battery cover

1. Slide the battery lock lever (circled in the illustration) in the direction of .

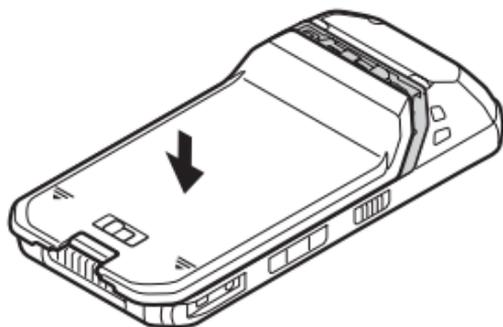


- Slide the battery cover by firmly placing your hands as shown in the illustration.
 - When removing the battery cover, be careful so that you do not drop the battery.

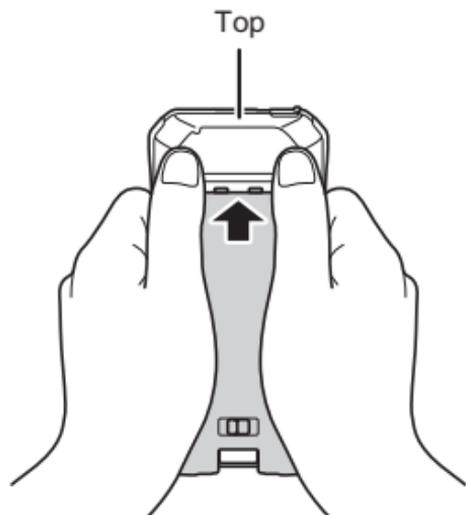


Attaching the battery cover

- Place the battery cover on the unit as shown in the illustration.
 - If the battery is protruding out of the unit, gently push the battery in using the battery cover.



- Slide the battery cover by firmly placing your hands as shown in the illustration until you hear a click.



- Lock the cover by sliding the battery lock lever (circled in the illustration) toward .
 - Firmly slide until the red area is no longer visible.



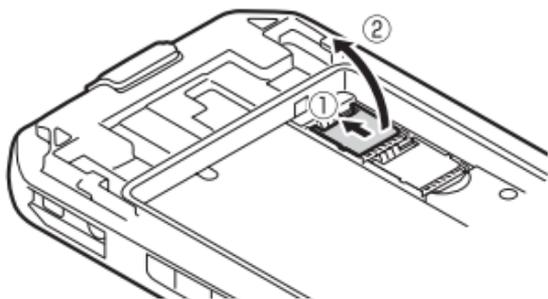
IMPORTANT

- Observe the following to ensure the waterproof and dustproof performance of the unit.
 - Always make sure the battery cover is securely closed and locked.

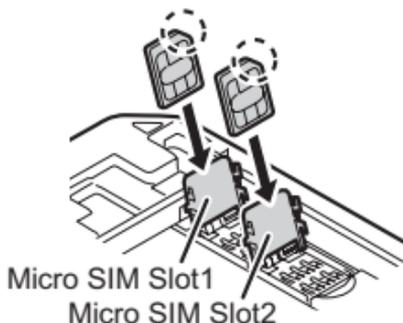
Installing SIM cards (certain models only)

You can install up to two SIM cards.

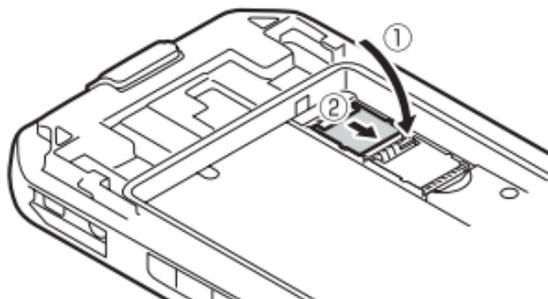
1. Remove the battery cover (page 17).
 - If a battery is installed, remove it (page 25).
2. Slide the Micro SIM card slot in the direction of the arrow (①), and then open it (②).



3. Insert the SIM card into the desired Micro SIM card slot.
 - Install only Micro SIM cards.
 - If only one SIM card is installed, insert it into Micro SIM card slot 1 (Micro SIM Slot1).
 - Hold the SIM card so that the metal terminals are facing you, and insert with the notch facing in the same direction of the circled area in the illustration below.



4. Close the Micro SIM card slot (①), and slide it in the direction of the arrow (②) until you hear a click.



- To remove a SIM card, follow the same procedure, and then pull out the SIM card at step 3.

Note

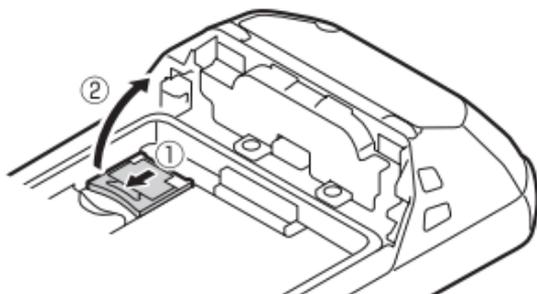
- See the Reference Manual (flick the Start screen to the left, and then tap **[Online Manual]** in the All apps list) for information on selecting the active SIM card slot and the preferred mobile network mode.

Installing an SD card

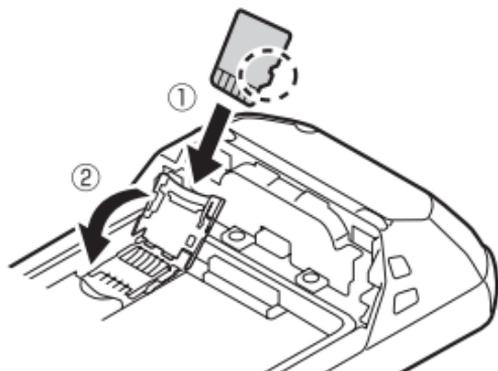
When installing or removing an SD card, place the unit on a flat surface.

1. Remove the battery cover (page 17).
 - If a battery is installed, remove it (page 25).

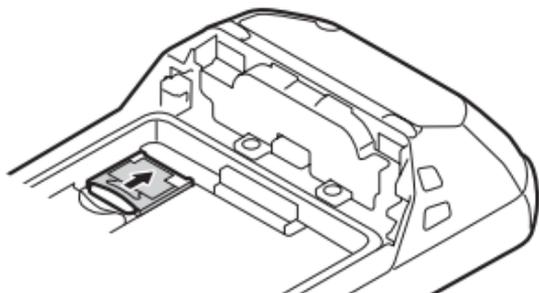
2. Slide the microSD card slot in the direction of the arrow (①), and then open it (②).



3. Insert the microSD card into the microSD card slot (①), and then close the slot (②).
- Install only microSD cards.
 - Hold the microSD card so that the metal terminals are facing you, and insert with the notch facing in the same direction of the circled area in the illustration below.



4. Slide the microSD card slot in the direction of the arrow until you hear a click.



- To remove a microSD card, follow the same procedure, and then pull out the microSD card at step 3.

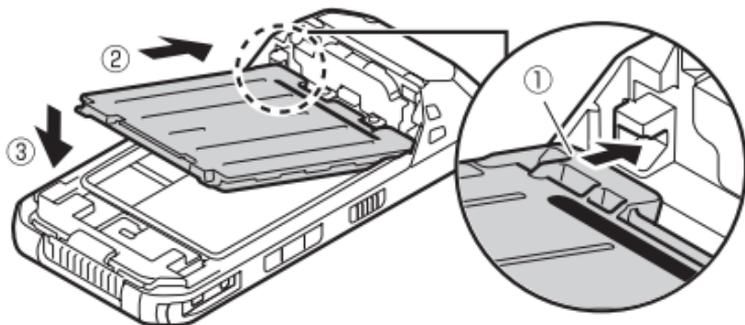
Installing and removing the battery

Make sure to turn off the unit before replacing the battery.

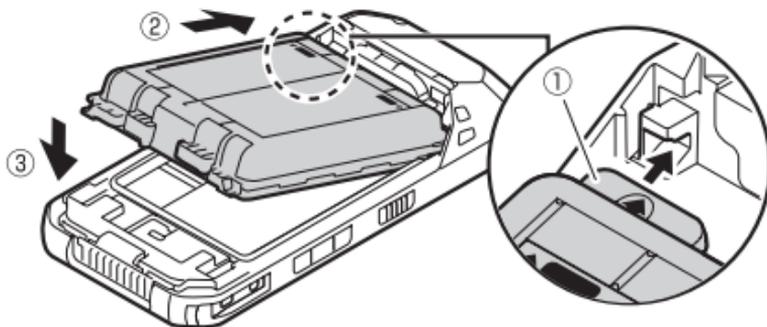
Installing the battery

1. Remove the battery cover (page 17).
2. Insert the tabs at the battery's terminal side (①) into the notches of the unit (②), and then lower the battery into place (③).

For FZ-VZSUN110U



For FZ-VZSUN120U



- The battery may protrude out of the unit even if you install the battery correctly. However, this is not a malfunction or defect.

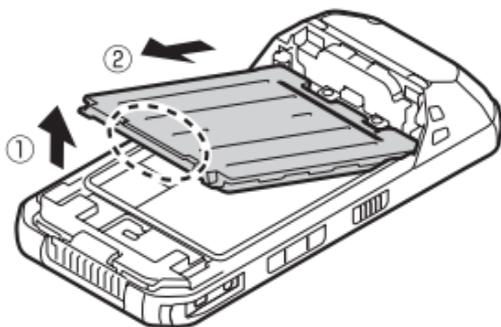
IMPORTANT

- Observe the following to ensure the waterproof and dustproof performance of the unit.
 - When installing the battery, make sure there is no debris lodged in the gasket that seals the unit and in the area around the battery.

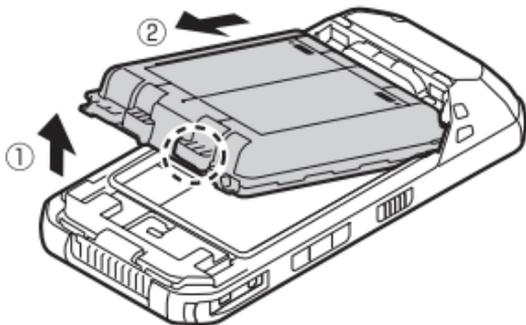
Removing the battery

1. Remove the battery cover (page 17).
2. Lift the battery up using the tab (circled in the illustration) (①), then remove it (②).

For FZ-VZSUN110U



For FZ-VZSUN120U



IMPORTANT

- Do not remove the battery while the unit is wet. When the unit is wet, remove the water by wiping off the water droplets and thoroughly drying the unit before removing the battery. (See "Waterproof/dustproof", page 5.)

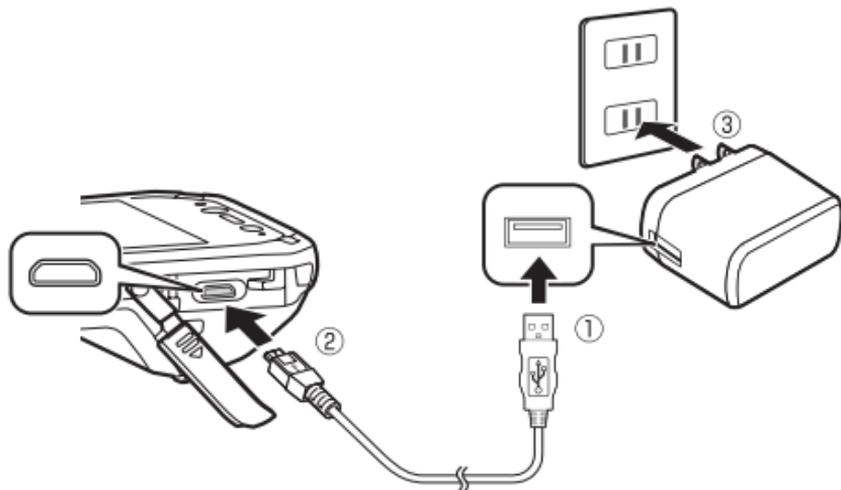
Replacing the battery (Battery warm swap)

You can replace the battery without turning the unit off.

- Replace the battery within 30 seconds. If more than 30 seconds has passed, apps that are running are forced to close and you may lose unsaved data.
 - During warm swapping, all wireless functions are turned off temporarily.
1. Flick the Start screen to the left, and then tap **[Warm Swap]** in the All apps list.
 2. Follow the on-screen instructions.
 - It may take some time until the indicator lights in green.
 3. Replace the battery.

Charging the battery

- The battery is not charged at the time of purchase. Charge the battery before turning on the unit for the first time or after an extended period of storage.
1. Face the USB mark of the USB connection cable upward, and connect the AC adaptor (①) and the unit (②).
 2. Plug the power plug (③) of the AC adaptor into a power outlet.
 - The shape of the power plug varies depending on your country.



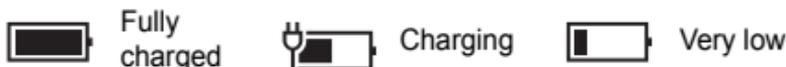
- Charge the battery in environments with an ambient temperature of 10 °C to 35 °C.
- The indicator lights in orange while the battery is charging, and lights in green when charging is complete.
- The unit prevents overcharging of the battery by charging only when the remaining battery level is less than approximately 95 % of its full capacity.
- You can also charge the unit by connecting it to the USB port of a computer or other device using a USB connection cable.

Note

- When removing the USB connection cable, make sure to remove it while holding the plug. Do not pull by the cable.
- When connecting a USB connection cable, note the shape of the micro USB plug and the micro USB port. Do not attempt to connect the USB connection cable upside down.
- Remove any dust or water droplets from plugs before connecting them. Do not use excessive force when inserting plugs or insert them at an angle.

Confirming the battery level

The battery level is displayed in the upper-right corner of the screen, in the status bar.



You can also confirm the specific amount of battery level remaining. Flick the Start screen to the left, and then in the All apps list, tap **[Settings]** → **[System]** → **[Battery saver]** / **[Battery]**.

Turning the unit on and off

Turning the unit on

Press and hold  (power button) on the top of the unit until the unit briefly vibrates.

Turning the unit off

1. Press and hold  (power button) until **[slide down to power off]** is displayed.
2. Tap the screen and slide your finger down.

Turning the screen on and off

- To turn the screen off

Press  (power button).

- To turn the screen on

1. Press  (power button). By default, you may also press  (Start button) to turn on the screen.
 - The lock screen is displayed.
2. Flick the lock screen upwards.

Configuring the unit for the first time

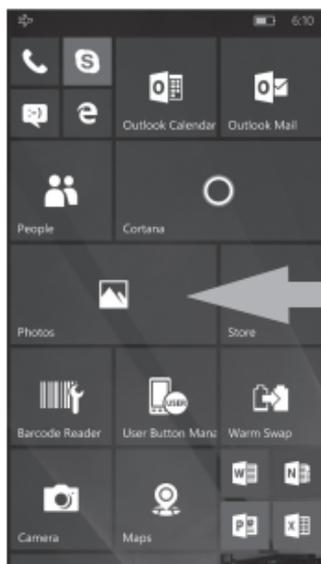
The first time you turn the unit on, you will be prompted to configure different settings. Follow the on-screen instructions and configure each item as needed. An Internet connection is required to configure certain items.

- If you do not want to add the provisioning package when you are prompted, press **[Cancel]** and proceed to the next settings screen.

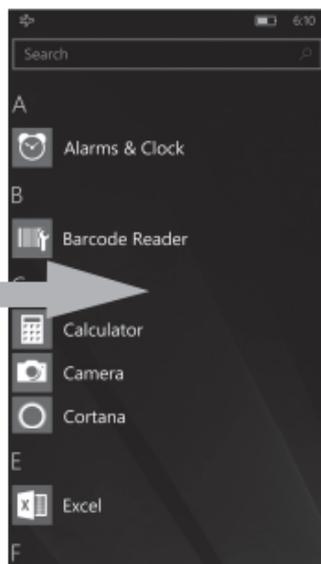
Screen display

Using the Start screen and the All apps list

The Start screen is the starting point for all operations. The Start screen already has a number of tiles displayed on it, but the tiles displayed and their locations can be changed as necessary. Press  (Start button) to return to the Start screen at any time. Flick the Start screen to the left to switch to the All apps list, where all of the applications on the device are displayed in a list.



Start screen



All apps list

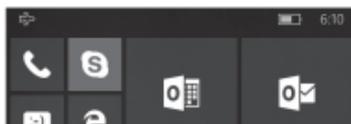


- Tap any letter on the All apps list to jump to a specific section of the list.

Using the status bar

The status icons displayed on the status bar at the top of the screen indicate the current status of the device.

- See the Reference Manual for an explanation of the icons.

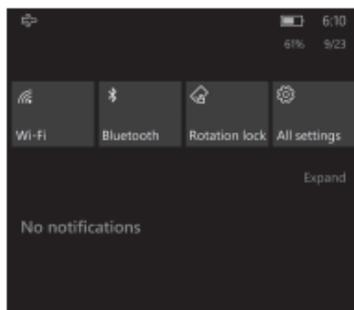


— Status bar

Using the action center

Detailed information about incoming calls, text messages, and app update information is displayed in the action center. The action center is displayed by flicking downward from the top of the screen and is hidden by flicking up from the bottom of the screen.

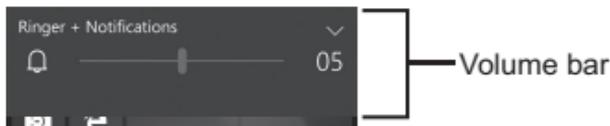
While the action center is displayed, you can tap a notification to take action or change the on/off settings for displayed apps. Tap **[All settings]** to switch to the **[Settings]** app.



Basic operations

Adjusting the volume

1. Press [+] or [-] of the Volume button.
 - The volume bar for phone calls and notifications is displayed at the top of the screen. (It disappears after several seconds.)



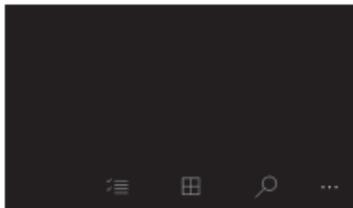
2. Press [+] or [-] to set the volume at an appropriate level.
 - The volume level is displayed on the right side of the volume bar.

Using the volume adjustment panel

Tap the [v] on the right edge of the volume bar to display the volume adjustment panel. (It will disappear after several seconds.) While the volume adjustment panel is displayed, you can also adjust the volume for media and apps or turn the vibration on or off.

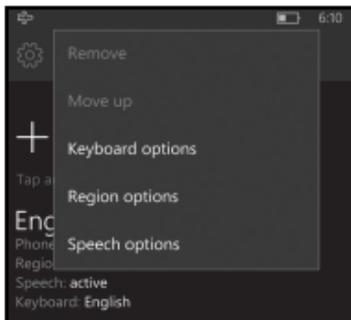
Using the app bar

Depending on the application, the app bar is displayed at the bottom of the display during operation and you can tap the icons to perform operations. Tap **•••** on the right side of the screen to display explanations for each icon, the operation menu, and so on.



Using the context menu

Some items have context menus. The context menu is similar to the right click menu on a computer. Context menus can be opened by tapping and holding an item. To close the menu, tap any place outside of the menu.



Displaying the App switcher

When multiple apps are active, press and hold  (Back button) to display the App switcher. Flick between the screens and tap one to switch to that screen, or flick the screen downwards to force quit the app.

To close the App switcher, press  (Back button).

Factory data reset

CAUTION

- The following procedure resets all settings and erases any data you have stored in the unit. Back up important data before performing this procedure.
1. Flick the Start screen to the left, and then in the All apps list, tap **[Settings]** → **[System]** → **[About]**.
 2. Tap **[Reset your phone]** → **[Yes]** and follow the on-screen instructions.
 - The unit restarts when the factory data reset is complete.

Troubleshooting

If you experience any trouble while using the unit, refer to the information in this section for troubleshooting. See the Reference Manual (flick the Start screen to the left, and then tap **[Online Manual]** in the All apps list) for additional troubleshooting information.

If the problem persists, contact your technical support representative.

Starting up

The unit does not turn on.

- To turn the unit on, press and hold  (power button) until the unit briefly vibrates.
- The battery may be low or completely discharged. Charge the battery.
- The unit may be too hot or too cold. Leave the unit in an environment of 10 °C to 35 °C for about an hour, and then try again.

The unit does not wake up from sleep.

- The battery may have become completely discharged while the unit was in sleep mode. In this case, any data which has not been saved will be lost. Charge the battery.
- The unit may be too hot or too cold. Leave the unit in an environment of 10 °C to 35 °C for about an hour, and then try again.

Nothing appears on the screen.

- The screen may have turned off to save power. Press  (power button). By default, you may also press  (Start button) to turn on the screen.
- Charge the battery.
- Install the battery correctly.
- Replace the battery with a fully-charged one.
- The screen is too dark. See “The screen is too dark.” (page 35).

Other startup problems

- Disconnect and remove all peripheral devices.

Shutting down

The unit does not turn off.

- It may take one or two minutes for the unit to turn off. This is not a malfunction.
- Press and hold  (power button) for at least 10 seconds, or press and hold  (power button) and [-] of the Volume button for at least 10 seconds to force the unit to restart, and then try again.
- Disconnect and remove all peripheral devices.

Screen

The screen is too dark.

- The **[Automatically adjust display brightness]** / **[Change brightness automatically when lighting changes]** setting reduced the brightness according to the ambient brightness. Manually adjust the screen brightness.
 1. Flick the Start screen to the left, and then in the All apps list, tap **[Settings]** → **[System]** → **[Display]**.
 2. Tap the **[Automatically adjust display brightness]** / **[Change brightness automatically when lighting changes]** switch to turn it off.
 3. Adjust the **[Brightness level]** / **[Adjust brightness level]** slider.
- The **[Minimum limit brightness]** setting of customized silent mode was turned on. Turn the setting off.
 1. Flick the Start screen to the left, and then in the All apps list, tap **[Settings]** → **[Extras]** → **[Customized silent mode]**.
 2. Tap the **[Customized silent mode]** switch to turn it off, then tap the **[Minimum limit brightness]** checkbox to turn it off.
 3. Tap the **[Customized silent mode]** switch to turn it on.

There are red, green, or blue dots on the screen, or there is unevenness in screen colors or brightness.

- The following are not malfunctions.
 - Although advanced high-precision technologies are used in the production of color LCD screens, a very small number of the screen pixels may be dark or remain constantly lit.
 - Due to the natural characteristics of LCD screens, you may notice unevenness in colors and brightness depending on your angle of view. Hues may also vary by unit.

Indicator

The indicator flashes in green and orange.

- The battery cannot be charged temporarily because the ambient temperature is too low or too high. Leave the unit in an environment of 10 °C to 35 °C for about an hour.

The indicator lights in red.

- The remaining battery level is approximately 10 % or less of a full charge. Charge the battery.

The indicator flashes in red.

- Battery authentication failed. Use a specified battery.
- There may be debris lodged in the battery charge terminals. Remove the battery and remove any debris found.

The indicator does not light during charging.

Battery charging ends quickly, or the battery cannot be charged at all.

- The AC adaptor or the USB connection cable is not connected properly. Confirm the connection.
- There may be debris lodged in the battery charge terminals. Remove the battery and remove any debris found.
- Replace the battery with a new one.

The screen is dim and the indicator flashes in red or lights in green.

- The battery cover may be detached. Attach the cover properly.

Other

The date and time are incorrect.

- Confirm the date and time settings. Flick the Start screen to the left, and then in the All apps list, tap **[Settings]** → **[Time & language]** → **[Date & time]**.
- Set the date and time automatically.
 1. Flick the Start screen to the left, and then in the All apps list, tap **[Settings]** → **[Time & language]** → **[Date & time]**.
 2. Tap the **[Set date and time automatically]** and **[Set time zone automatically]** (certain models only) switches to turn them on.
 3. Make sure the unit is in an area with good wireless reception, turn the unit off, and then turn it on again.

The unit's operation is slow.

- Ambient temperature may be too low or too high. Leave the unit in an environment of 10 °C to 35 °C for about an hour and then try again.

The unit does not respond.

- Turn the unit off and then on again (page 28).
- If an app does not work normally, follow the instructions below to force quit the problematic app.
 1. Press and hold  (Back button) to display the App switcher, and then flick between the screens to select the desired app.
 2. Flick the desired app downwards to force quit.

The screen freezes and no operations can be performed.

- Press and hold  (power button) for at least 10 seconds, or press and hold  (power button) and  of the Volume button for at least 10 seconds to force the unit to restart, and then try again.

Appendix

Specifications

Typical unit specifications and certain options are described below. Unit configuration may vary.

Model No.	FZ-F1
CPU	Qualcomm® MSM8974AB 2.3 GHz Quad Core
Memory	2 GB* ¹
Storage	16 GB
Display	Internal LCD 4.7 in. HD (1280 × 720 dots), Aspect ratio 16:9 16 777 216 colors

<p>Wi-Fi</p>	<p>Standards supported IEEE 802.11a / IEEE 802.11b / IEEE 802.11g / IEEE 802.11n / IEEE 802.11ac</p> <p>Transmission method OFDM system, DSSS system</p> <p>Wireless channels used IEEE 802.11a / IEEE 802.11n (5 GHz) / IEEE 802.11ac</p> <ul style="list-style-type: none"> • W52 (36, 38, 40, 42, 44, 46, 48 ch) • W53 (52, 54, 56, 58, 60, 62, 64 ch) • W56 (100, 102, 104, 106, 108, 110, 112, 116, 118, 120, 122, 124, 126, 128, 132, 134, 136, 140 ch) <p>IEEE 802.11b / IEEE 802.11g / IEEE 802.11n (2.4 GHz): 1 ch - 13 ch</p> <p>RF frequency band 2.4 GHz Band: 2.412 GHz - 2.472 GHz 5 GHz Band: 5.18 GHz - 5.32 GHz, 5.5 GHz - 5.7 GHz</p> <p>Data transfer rate IEEE 802.11a: up to 54 Mbps IEEE 802.11b: up to 11 Mbps IEEE 802.11g: up to 54 Mbps IEEE 802.11n:</p> <ul style="list-style-type: none"> • HT20: up to 72.2 Mbps • HT40: up to 150 Mbps <p>IEEE 802.11ac:</p> <ul style="list-style-type: none"> • VHT20: up to 86.7 Mbps • VHT40: up to 200 Mbps • VHT80: up to 433.3 Mbps
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Bluetooth	Version 4.1, Class 1 Transmission method FHSS system Wireless channels used 0 - 78 ch (Low energy: 0 - 39 ch) RF frequency band 2402 MHz - 2480 MHz Supported profile A2DP, AVRCP, HFP, HID, HOGP, MAP, OPP, PAN, PBAP, SPP, GATT, DI
Mobile networking (certain models only)	LTE, HSPA+, UMTS, EDGE, GPRS, GSM SIM card slot Micro SIM card slot x2
Sound	Speaker Twin speakers (100 dBA), phone speaker Microphone 3 microphones, noise suppressor
Security	ARM® TrustZone® (built-in), TPM (TCG V2.0 compliant)
Camera	Front 5 megapixels Video: 1920 × 1080 pixels, 30 fps Still: 2592 × 1944 pixels Rear 8 megapixels Video: 1920 × 1080 pixels, 30 fps Still: 3264 × 2448 pixels
GNSS	GPS/GLONASS (±2 to 4 m)
Barcode reader	1D, 2D support
Enhanced data security	FIPS 140-2 level-1 compliant

Sensors	Ambient light sensor, Digital compass, Gyro sensor, Acceleration sensor, Proximity sensor
NFC	Built-in (Type A, B, FeliCa)
Card slots	microSD card slot ×1 ^{*2} (microSDXC compatible)
Interfaces	USB 2.0 port ×1 ^{*3} , Headset jack ×1, Expansion bus connector (inside rear side, lower part of the unit)
Touchscreen	10-finger touch (capacitive) with: Glove touch mode ^{*4} Rain sensing touch mode ^{*5} Stylus pen mode (Active type, Passive type)
Power supply	Battery
AC adaptor	Included: FZ-AAE184E Input 110 V to 240 V AC, 50 Hz/60 Hz Output 5 V DC, 1.8 A
Battery (FZ-VZSUN110U)	Lithium-ion 3200 mAh (typ.) / 3100 mAh (min.) Rated Voltage 3.8 V Operating time (approx.) ^{*6} Standby: 630 hours ^{*7} Talk: 24 hours ^{*7} Barcode scanning ^{*8} : 12 hours Charging time (approx.) ^{*9} 3 hours (when using the included AC adaptor) 2 hours (when using the optional charging cup or cradle)

Extended Life Battery (FZ-VZSUN120U)	Lithium-ion 6400 mAh (typ.) / 6200 mAh (min.) Rated Voltage 3.8 V Operating time (approx.)* ⁶ Standby: 1260 hours* ⁷ Talk: 48 hours* ⁷ Barcode scanning* ⁸ : 24 hours Charging time (approx.)* ⁹ 5 hours (when using the included AC adaptor) 4 hours (when using the optional charging cup or cradle)
Power consumption * ¹⁰	Approx. 9 W* ¹¹
Dimensions * ¹² (W × D × H)	Battery (FZ-VZSUN110U) Approx. 74 mm × 156 mm × 16.3 mm / 31 mm (barcode reader section) without protrusions Extended Life Battery (FZ-VZSUN120U) Approx. 74 mm × 156 mm × 26 mm / 31 mm (barcode reader section) without protrusions
Weight * ¹³	Approx. 277 g, with the Battery (FZ-VZSUN110U) Approx. 368 g, with the Extended Life Battery (FZ-VZSUN120U)
Operating environment * ¹⁴	Temperature -10 °C to 50 °C Humidity 30 % to 80 % RH

Storage environment	Temperature -30 °C to 70 °C Humidity 30 % to 90 % RH
Operating system *15*16	Windows 10 IoT Mobile Enterprise
Water and dust resistance	IP66, IP68

Specifications are subject to change without notice.

- *1 1 MB = 1 048 576 bytes, 1 GB = 1 073 741 824 bytes
- *2 Operation has been tested and confirmed using the following Panasonic brand memory cards: SD (up to 2 GB), SDHC (up to 32 GB). Compatibility with other SD devices is not guaranteed.
- *3 Does not guarantee operation of all USB-compatible peripherals.
- *4 This mode may not operate properly depending on the type of glove.
- *5 Only single-finger operation is enabled.
- *6 Actual performance varies depending on usage conditions, connected peripherals, etc. Typically, operating time is reduced in colder environments.
- *7 Results measured with a stable signal, a new battery, and at a stationary position. Results will vary depending on the signal quality, operating environment, and system settings.
- *8 As defined by the JEITA Specification, Working Mode B. (Two times reading in every 10 seconds)
- *9 Varies depending on usage conditions.
- *10 When the battery is fully charged (or not being charged) and the unit is off.
- *11 Rated power consumption
- *12 Actual size may vary by unit configuration.
- *13 Average weight. Actual weight may vary by unit configuration.
- *14 Do not expose the skin to this product when using the product in a hot or cold environment.

When using the product in hot or cold environments, some peripherals may not perform properly. Confirm the recommended operation environment of the peripherals. Using the product continuously in hot environments will shorten the product life. Avoid continuous use in these types of environments.

When using the product in cold environments, the product may take longer to start up and battery operation time may be reduced.

Even when using the product within the temperature and humidity ranges listed here, using the product continuously in extreme environments will result in product deterioration and will shorten the life of the product.

- *15 Product functionality cannot be guaranteed if the operating system is modified or replaced by the user or a third party.
- *16 To maintain operating system (OS) servicing support from Microsoft, this product requires ongoing installation of new upgrades and updates. Contact your technical support representative for more information.

Accessories

Product name	Model number
AC Adaptor	CF-AA6373A
Battery Pack	FZ-VZSUN110U FZ-VZSUN120U
Cradle	FZ-VEBN111
Charging Cup	FZ-VCBN11U
Holster	FZ-VSTN12U
Hand Strap	FZ-VSTN11AU
4-Bay Cradle	FZ-VEBN121
4-Bay Battery Charger	FZ-VCBN121

Standard Limited Warranty

Panasonic System Communications Company Europe (referred to as "Panasonic") will repair this product (other than software, which is treated in a different section of this warranty) with new or refurbished parts, from the date of original purchase in the event of a defect in materials or workmanship. This warranty only applies to new Panasonic Toughbooks or Toughpads purchased in the EEA and Switzerland and Turkey.

Panasonic (or its authorised Service Provider) target to repair your equipment within 48 hours from its receipt in our service centre.

Additional charges may apply for shipment to countries outside of the European Union. Panasonic will use all reasonable endeavours to ensure this service.

This warranty only covers failures due to defects in materials or workmanship which occur during normal use for the applicable Service Agreement Period listed below. In the event that any product (or part thereof) is replaced, Panasonic shall transfer ownership of the replacement product (or part) to the customer and the customer shall transfer ownership of the replaced product (or part) to Panasonic.

Service Agreement Period - from original date of purchase

- Toughbooks (and every accessory included in the original packaging except the battery) - 3 years
- Toughpads (and every accessory included in the original packaging except the battery) - 3 years
- Additional peripherals manufactured by Panasonic (AC Adaptor and Power Cord, Car Adaptor and Power Cord, Cradle, Battery Charger) - 1 year
- Batteries - 6 months. Panasonic Warranty covers the battery for six months. A battery is considered good if it maintains 50 % of its charge capacity during the warranty period. If a battery is returned under this contract and testing determines that it has charge capacity greater than 50 %, the battery will be returned with an invoice for the retail purchase price of a new battery.

This warranty is extended solely to the original purchaser. A purchase receipt or other proof of date of original purchase will be required before warranty performance is rendered.

Limits and Exclusions:

This warranty does not cover and shall be void for:

- Broken or cracked LCD screen.

- Defective pixel in notebook displays and LCD screens within 0.002 %
- Damage that is attributable to fire, theft or acts of God.
- Damage caused by environmental influences (electrical storms, magnetic fields etc.).
- Damage which has not been caused during normal operation
- Repair of damage that is cosmetic only or does not affect product functionality such as wear and tear, scratches and dents.
- Failures caused by products not supplied by Panasonic.
- Failures resulting from alteration, accidental damage, casualty, misuse, abuse or neglect.
- Introduction of liquid or other foreign matter into the unit.
- Improper installation, operation or maintenance.
- Improper connections with peripherals.
- Maladjustment of consumer controls such as function settings.
- Modification or service by anyone other than Panasonic or its approved Service Providers.
- Products used as short term rental or leased equipment.
- Products whose serial number has been removed making the unit warranty condition impossible to clearly determine.

THIS PRODUCT IS NOT INTENDED FOR USE AS, OR AS PART OF, NUCLEAR EQUIPMENT/SYSTEMS, AIR TRAFFIC CONTROL EQUIPMENT/SYSTEMS, OR AIRCRAFT COCKPIT EQUIPMENT/SYSTEMS. PANASONIC WILL NOT BE RESPONSIBLE FOR ANY LIABILITY RESULTING FROM THE USE OF THIS PRODUCT ARISING OUT OF THE FOREGOING USES.

There are no other express warranties except as listed above.

We strongly recommend that customers backup their data before sending back their unit to an Authorised Service Provider.

Panasonic shall not be liable for loss of data or other incidental or consequential damages resulting from the use of this product, or arising out of any breach of this warranty. All express and implied warranties, including the warranties of satisfactory quality and fitness for a particular purpose are limited to the applicable warranty period set forth above. Panasonic shall not be liable for any indirect, special or consequential loss or damage (including without limitation any loss of profits) arising from the use of this product or for any breach of this warranty.

This limited warranty gives you specific legal rights, and you may have other rights that vary from country to country. You must consult the applicable country laws for a full

determination of your rights. This limited warranty is in addition to, and does not affect any rights arising out of any contract of sale or by statute.

Panasonic System Communications Company Europe

Data Storage Media

Data Storage Media is the media on which the Operating System, drivers and programs originally installed by Panasonic on the main unit are stored. This media is originally provided with the unit.

Panasonic warrants to you only that the disc(s) or other media on which the Programs are furnished will be free from defects in material and workmanship under normal use for a period of sixty (60) days from the date of delivery thereof to you, as evidenced by your purchase receipt.

This is the only warranty Panasonic makes to you. Panasonic does not warrant that the functions contained in the Programs will meet your requirements or that the operation of the Programs will be uninterrupted or error free.

Panasonic's entire liability and your exclusive remedy under this warranty shall be limited to the replacement of any defective disk or other media which is returned to Panasonic's authorized Service Centre, together with a copy of the purchase receipt, within the aforesaid warranty period.

Panasonic shall have no obligation for any defects in the disk(s) or other media on which the Programs are furnished resulting from your storage thereof, or for defects that have been caused by operation of the disk(s) or other media otherwise than on the Product or in the environment conditions other than those specified by Panasonic by alteration, accident, misuse, abuse, neglect, mishandling, misapplication, installation, maladjustment of consumer controls, improper maintenance, modification or damage that is attributable to acts of God. In addition, Panasonic shall have no obligation for any defects in the disk(s) or other media if you have modified, or attempted to modify any Program.

Duration of implied warranties, if any is limited to sixty (60) days.

Pre-installed software

Pre-installed software means the software shipped pre-loaded by Panasonic, not that loaded by any third party or selling agent.

Panasonic and its suppliers makes no warranty, either express, implied or statutory, with respect to software provided with the Product and licensed to Purchaser, its quality, performance, merchantability, or fitness for a particular purpose. Panasonic

does not warrant that the functions contained in the software will be uninterrupted or error free. Panasonic assumes no risk of and shall not in any case be liable for any damages, including, without limitation, any special, incidental, consequential, or punitive damages arising from breach of warranty or contract, negligence or any other legal theory, including, without limitation loss of goodwill, profits or revenue, loss of use of the Programs or Products or any associated equipment, cost of capital, cost of any substitute equipment, facilities, or services, downtime costs, or claims of any party dealing with such damages.

Some countries do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you.

This limited warranty gives you specific legal rights and you may also have other rights that vary from country to country. You must consult applicable country laws for a full determination of your rights.

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