

TABLET COMPUTER

DS13

USER'S GUIDE



Revision History

Revision	Date	Changes	Author
1.1.3	2025/07/09	Update Battery Shut Down Mode info. Update Environmental Specifications info.	Annabelle Wu
1.1.2	2024/04/10	Add Operating information: Installing Hand Strap	Annabelle Wu
1.1.1	2024/01/25	Add Managing Power info.: Shut Down Mode feature Update Power info.: Battery Pack and Shut Down Mode feature	Annabelle Wu
1.1.0	2023/08/24	Correct e-RMA info.: MilDef Crete's Website Update Specifications info.: Certifications, Battery Pack (BDSB3D)	Annabelle Wu
1.0.9	2023/06/27	Update Trademark info. Add Unpacking info. Change "BT" to "Bluetooth®"	Annabelle Wu
1.0.8	2023/01/05	Correct Specifications info.: Materials and Recycling	Annabelle Wu
1.0.7	2022/12/09	Update Managing Power info.: Battery Recalibration Update BIOS Setup info.: Battery Recalibration Sub-Menu Add Specification: Display info. Add Troubleshooting info.	Annabelle Wu
1.0.6	2022/06/13	Correct Working with Power Button (Heater Kit) info	Patricia Huang
1.0.5	2022/05/23	Update Specifications—Certifications Add UKCA info	Patricia Huang
1.0.4	2022/03/28	Add a note on Operating temperature in Specifications	Patricia Huang
1.0.3	2022/01/19	Add Keypad—Windows Key info	Patricia Huang
1.0.2	2021/11/05	Correct BIOS Setup — Advanced Menu	Patricia Huang
1.0.1	2021/04/09	Update CE/ FCC info Add Battery Characteristics info and correct note Add Battery operating temperature info Add Docklite DLDS info Add E-RMA Service instructions	Patricia Huang

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Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

RF exposure warning

This equipment must be installed and operated in accordance with provided instructions and antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

Regulatory Information/Disclaimers

Installation and use of this computer must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution of the connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

Federal Communications Commission regulatory compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC 47 CFR Part 15 Subpart B

FCC 47 CFR Part 15 Subpart C

FCC 47 CFR Part 15 Subpart E

Note:

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Important:

Changes or modifications to this product not authorized by MilDef could void the electromagnetic compatibility (EMC) and wireless compliance and negate your authority to operate the product.

In order to maintain compliance with FCC regulations, compliant peripheral devices and shielded cables must be used with this equipment.

EU Declaration of Conformity



The device is hereby confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive (2014/30/EU), Radio Equipment Directive (2014/53/EU) and Low Voltage Directive (2014/35/EU), if used for its intended use and that the following standards have been applied:

1. Safety

Applied Standard(s):

EN 62368-1: 2014/A11:2017

2. Health

Applied Standard(s):

EN 50566:2017

EN 62209-2:2010

3. Radio Frequency Spectrum Usage

Applied Standard(s):

EN 300 328 V2.1.1 : 2016-11

EN 301 893 V2.1.1 : 2017-05

EN 303 413 V1.1.1 : 2017-06

4. Electromagnetic Compatibility Directive

Applied Standard(s):

EN 55032 Class B (2015)

EN 61000-3-2 (2018)

EN 61000-3-3 (2013/A1: 2017)

EN 55024 (2010/A1: 2015)

EN 61000-4-2 (2009)

EN 61000-4-3 (2006+A2: 2010)

EN 61000-4-4 (2012)

EN 61000-4-5 (2014+A1: 2017)

EN 61000-4-6 (2014)

EN 61000-4-8 (2010)

EN 61000-4-11 (2004/A1: 2017)

EN 301 489-1 V2.2.0 (2017)

EN 301 489-17 V3.2.0 (2017)

EN 301 489-19 V2.1.0 (2017)



The device is hereby confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive 2016, Radio Equipment Directive 2017 and UKCA-Electrical Equipment (Safety) Regulation 2016, if used for its intended use and that the following standards have been applied:

1. Safety

Applied Standard(s):

BS EN 62368-1:2020+A11:2020

2. Health

Applied Standard(s):

BS EN 50566:2017

EN 62209-2 Jun 2010

3. Radio Frequency Spectrum Usage

Applied Standard(s):

ETSI EN 300 328 V2.2.2 : 2019-07

ETSI EN 301 893 V2.1.1 : 2017-05

ETSI EN 300 413 V1.1.1 : 2017-06

4. Electromagnetic Compatibility Directive

Applied Standard(s):

BS EN 55032 Class B (2015/A1:2020)

IEC 61000-3-2 Ed.5.1 (2018+A1:2020)

IEC 61000-3-3 Ed.3.1 (2017)

BS EN 55035 (2017/A11:2020)

ETSI EN 301 489-1 V2.2.3 (2019-11)

ETSI EN 301 489-17 V3.2.4 (2020-09)

ETSI EN 301 489-19 V2.1.1 (2019-04)



The device is hereby confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive 2015, Radio Equipment Directive 2017, and RCM(C-tick)-Electrical Equipment (Safety) Regulation 2018, if used for its intended use and that the following standards have been applied:

1. Safety

Applied Standard(s):

AS/NZS 62368-1:2022

2. Health

Applied Standard(s):

AS/NZS 2772.2:2018A1(SAR)

3. Radio Frequency Spectrum Usage

Applied Standard(s):

AS/NZS 4268:2017 A1:2021

4. Electromagnetic Compatibility Directive

Applied Standard(s):

AS/NZS CISPR 32 2015 / A1 : 2020

Power Conservation

This computer consumes less power compared to conventional consumer computers. The power consumption may be further reduced by properly configuring the Power Management Setup.

It is recommended that the power saving features be enabled even when not running on battery power. Power Management features can conserve power without degrading system performance.

Power Safety

There are specific power requirements for your computer:

- Only use an approved AC adapter designed for this computer.
- There is a 3-prong grounded plug for the AC adapter. The 3rd prong is an important mechanism for ensuring product safety. Please do not neglect the importance of this mechanism. If you are unable to access a compatible outlet, please hire a qualified electrician to install a compatible outlet for you.
- When unplugging the AC power cord, please make sure to disconnect the cord by pulling from the plug head instead of pulling from the wire to prevent wire damage.
- Make sure the power outlet and any other extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, please make sure it is disconnected from any external power source.



Warning

Before any upgrade procedures, make sure the power is turned off, and all the cables are disconnected. Also, it is advisable to remove your battery to prevent your computer from accidentally turning on.

Battery Precautions

- Only use batteries designed for this computer. Using incompatible battery types may cause explosion, leakage or damage to the computer.
- Do not remove the battery from the computer while the computer is powered on.
- Do not continuously use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer is able to continuously work with a damaged battery, the circuit damage may occur and possibly cause fire.
- Always use the charger designed for this computer to recharge the battery. Incorrect recharging may cause the battery to explode.
- Do not try to repair a battery by yourself. For battery service or replacement, please contact with your service representatives.
- Please dispose damaged battery promptly and carefully. Explosion or leakage may occur, if the battery is improperly handled or discarded.

Notice:

For safety, charging will stop if the internal temperature of the battery is out of range(<0°C; >50°C). Please note that charging could have stopped before the ambient temperature reaching these boundaries because the internal temperature of the battery does not equal to the ambient temperature.



Battery Disposal & Caution:

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its service life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal. Danger of explosion may possibly occur, if the battery is incorrectly replaced. Replace only with the same or the equivalent battery recommended by the manufacturer. Discard the used battery according to the manufacturer's instructions.

Environmental Information, Material Safety & Recycling

All materials used in the manufacturing of this equipment are recyclable or environmentally friendly. Please recycle the packing materials in accordance with local regulations at the end of the product's service life.

Notice:

- The equipment may contain insignificant amount of hazardous substances for health and environment below control level.
- To avoid spreading such substances into the eco system and to minimize the pressure on the natural environment, you are encouraged to reuse or recycle most of the materials in a safe way after the product's service life.
- For more information on collection, reuse and recycle of materials, please consult local or regional waste administrations for more information. You can also contact your dealer for more information on the environmental details of the equipment.
- The symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Please check local regulations for disposal of electronic products.



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Chapter 1 - Getting Started

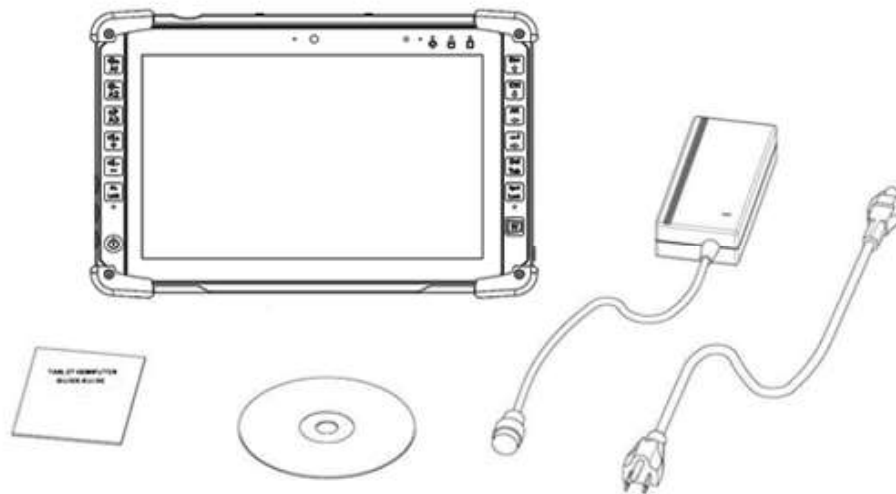
Unpacking

**Caution:**

- *Fully charge the battery before using it for the first time.*

The following components come with your computer. If anything is missing or damaged, please notify the dealer immediately.

- Computer unit
- AC Adapter
- AC Power Cord
- Utility DVD
- Quick Guide



Appearance Overview

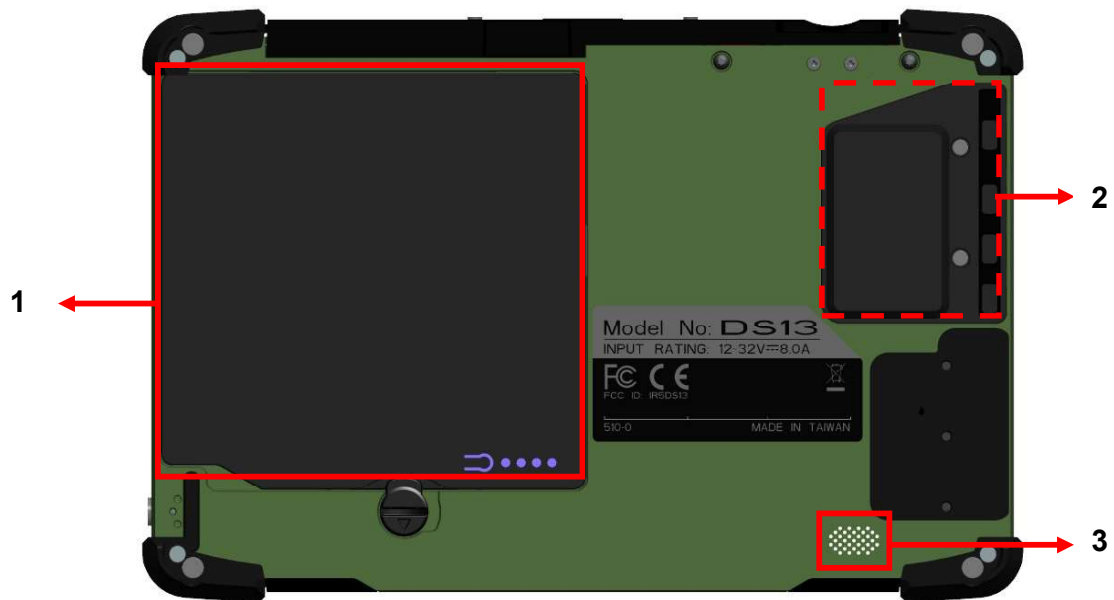
Note:

- The following illustrations show the tablet mounted on optional devices, which may not appear on your devices.

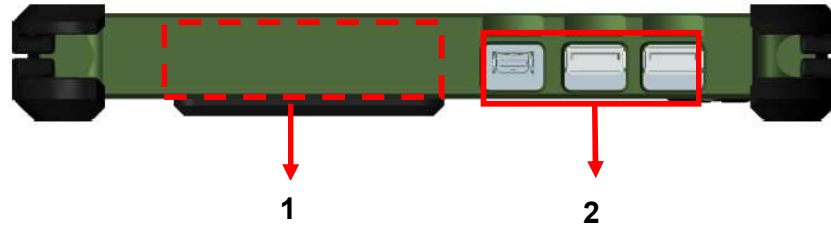
Front


1. Power Button
2. Function keys & Input Lock Key
3. LED Indicators
4. Touch Screen
5. Light sensor
6. Embedded digital Mic

Rear



1. Removable battery pack
2. mSATA SSD cover
3. HD Audio & mono Speaker

Left

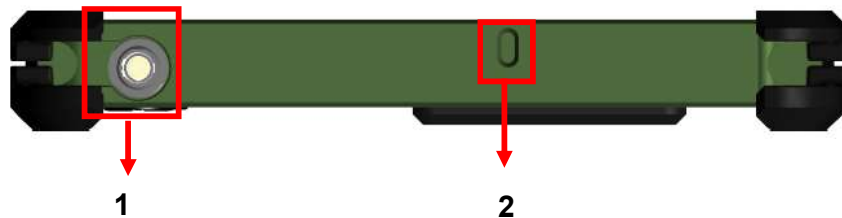
1. Optional Fischer I/O (From left to right X4, X3, X2, X1)

Choose 1~4 out of 6 as below:

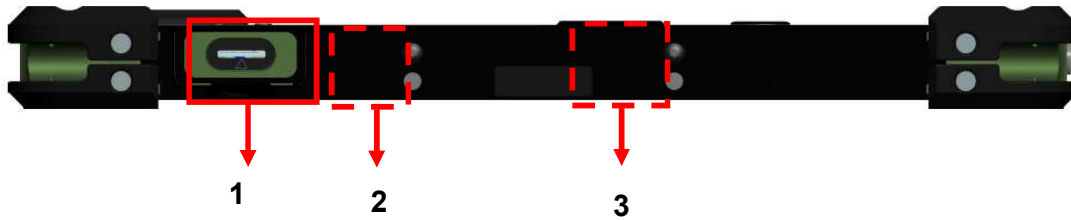
- USB 2.0 x1
- COM x 2 (RS232 x 2 or RS232 x1/RS422 x 1)
- 2nd GLAN x1
- Audio x1
- Sealed Headset (Headphone out/Mic-in Combo) x1

2. Standard: Mini DisplayPort x 1/USB3.1 x 2

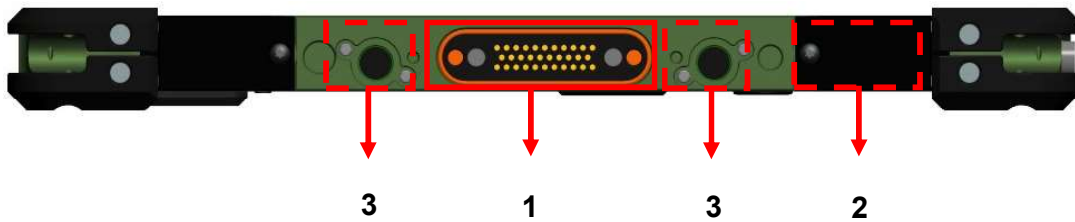
Optional: Mini DisplayPort x 1/USB3.1 x 1/ GLAN x 1

Right

1. DC-In 12~32V
 - Default: Fischer 3-pin connector
2. Kensington cable lock slot

Top

1. Micro SD Card Slot
2. Optional Built-in WLAN Antenna
3. Optional Built-in GNSS Antenna

Bottom

1. Docklite connector
2. Optional Built-in WLAN/ Bluetooth® Antenna
3. Ext. Antenna signal

Chapter 2 - Operating Information

Start Using Your Tablet Computer

Always turn on your tablet computer by using the power button. This is the standard operating procedure to start using your tablet computer. After turning on the power of your tablet computer, it will start with the Operating System (OS) installed.

Boot Up

When you turn on the power, your computer will start to load the OS into the system memory. This start-up procedure is called “boot up”.

Power On Self-Test (POST)

Each time your computer is turned on, the BIOS will automatically perform a self-test of CPU, memory, hardware devices, and so on.

Stop Using Your Tablet Computer

Each time when you finish working with your tablet computer, there are several ways to stop your tablet computer from operating.

Shut down

Directly click “Shut down” from your OS to turn OFF the power of your computer. Before shutting down, please do remember to save unfinished works and close your applications to prevent your SSD from suffering possible data loss or damage. “Shut down” will turn OFF power of your computer. If you want to start your computer again, you need to turn it ON again by pressing the power button.

Sleep

Under “Sleep” mode, the system will temporarily save your work into the computer’s RAM. If you want to start your computer again, please press the power button to resume. Under Windows 8, you can enter this mode by directly clicking:

Move your cursor to the upper-right or lower-right corner of the screen, and then click “Settings” => Click “Power” => Click “Sleep”.

Hibernate

Under “Hibernate” mode, the system will save your work into SSD. If you want to start your computer again, you need to press and hold the power button (approx. 2 sec.) until the SSD/Heater indicator lights on. Under Windows 8, you can enter “Hibernate” mode by directly clicking:

Move your curse to the upper-right or lower-right corner of the screen, and then click “Settings” => Click “Power” => Click “Hibernate”.

Force Shut Down

In the event that your tablet computer hangs or stops responding, you can perform a force shut down by pressing and holding the power button for 4~5 seconds. Please note that any unsaved work or data will be lost this way.

Working with Power Button (Heater Kit)

DS13 is equipped with a heater kit to enable work under low temperature. The heater will heat up the LCD to the temperature for booting up the system. Also, the heater will constantly monitor LCD temperature. Once the temperature becomes lower, the heater will heat up again to maintain the temperature for operation.

Note:

- When ambient temperature is under -15°C (the default setting for your tablet computer), the system may not boot up immediately. System will beep with Heater LED light flashing orange to indicate that the heater is in operation. After 3 ~ 10 minutes (depending on the ambient temperature), the system will boot up automatically. The device will be forced to boot up if it is heated for 10 minutes.
- In emergency situations, you can skip the heating process by pressing and holding the power button for 9 ~ 11 seconds then release. The speaker will beep with a special sound to signify that the heating process has been skipped (Please note that not all devices are guaranteed to work properly in this case).
- Press the power button again during the heating process will shut down the computer.
- Heater kit is not supported under battery mode.

The following is a list of functions associated with your tablet computer's power button:

1. Press and hold for 9 ~ 11 seconds:
The system will skip heating process and force boot up.
2. Press and hold for 5 ~ 8 seconds:
Enable/Disable the sound of Heater.
3. Press and hold for 4 seconds under OS:
Shut down the system.
4. Press and hold for 2 seconds:
Boot up the system.
5. Press the power button for functions including:
 - a. Power on the system.
 - b. Force Shut Down.
 - c. Sleep/Hibernate (Dependent on OS settings).

Installing Operating System

Your computer is designed to operate with Microsoft Windows 7 or Windows 8 32 / 64-bit Operating System. Please connect your computer with an external USB-interface drive to start the OS installation.

Note:

- A USB hub may be required during installation to connect with an external USB-interface ODD, as the System USB port may not supply enough power. Please connect your USB hub with extra power supply to complete the installation.

Indicators and Function keys

LED Indicators

LED Indicator	Description
	Power/ S3 Indicator: Green/ Flashing Green
	mSATA SSD/ Heater Indicator: Green/ Orange
	Charge/ Battery Low Indicator: Orange/ Flashing Orange

Function Keys

Function Lock key  is used to switch function of the other buttons. Press the function Lock key to switch between 2 layers. The indicator under the function Lock key will light up if the other buttons are in 2nd layer and it will be turned off if in 1st Layer.

Button	1 st Layer	2 nd Layer
 A1	Brightness Up	A1 (User settable)
 A2	Brightness Down	A2 (User settable)
 A3	Rotation	A3 (User settable)
 IQ+	Volume Up	+
 IQ-	Volume Down	-
 Fn Lock	Function Lock	
 Esc	Esc	↑
 Ctrl	Ctrl	↓
 Alt	Alt	←
 Enter	Enter	→
 Del Tab	Del	Tab
 Input Lock	Input Lock	
 W	Windows Key	On/Off Keypad Backlight

Note:

- System Manager must be installed to enable the Rotation key or it will not work.

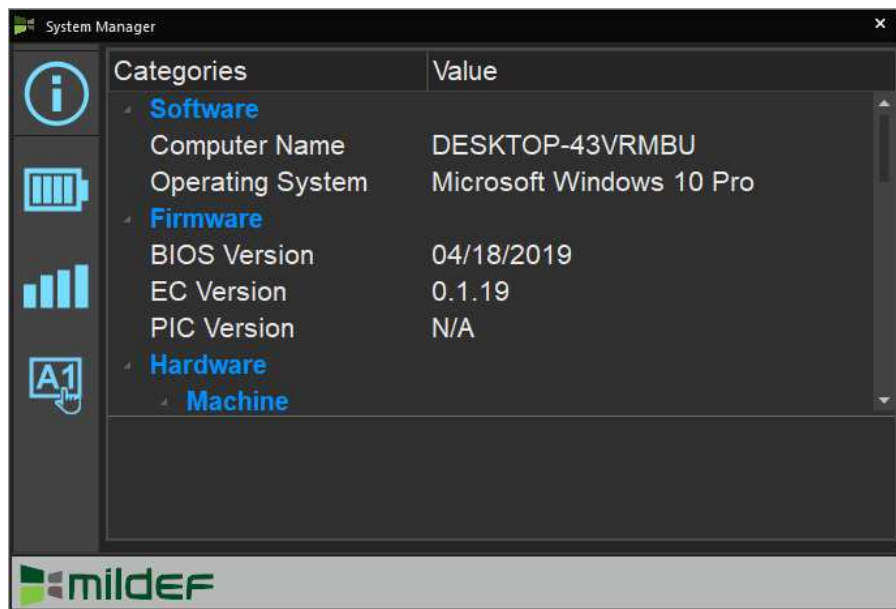
Input Lock key

To prevent from unexpected input by buttons and touch screen, you can press Input Lock key. When Input Lock function is on, the input from devices including buttons and touch screen will be locked. To cancel the input lock function, just press the Input Lock key again and the indicator will be turned off.

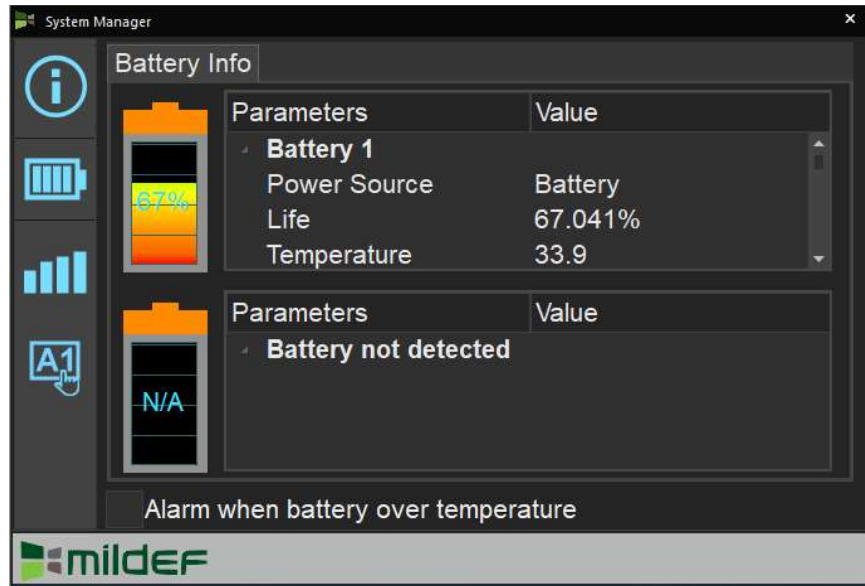
System Manager

System Manager is an app which allows user to access information(System, battery),and set RF device, function keys easily.

1. System information:



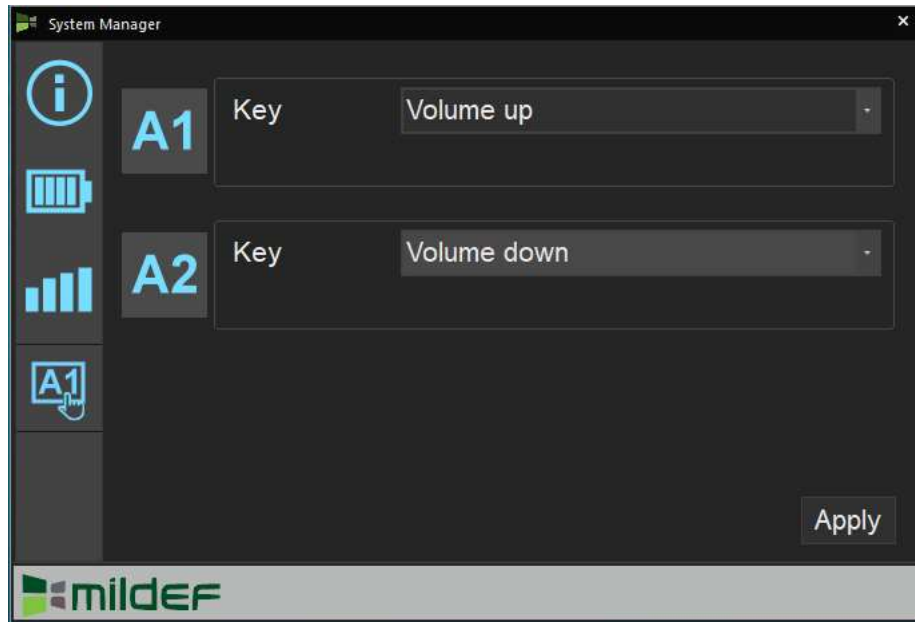
2. Battery information:



3. RF Device control panel:



4. Function key control panel.

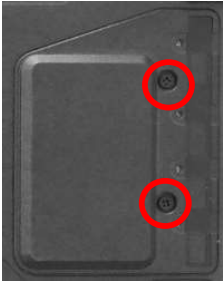
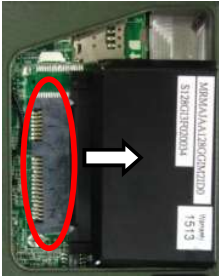


Available Function Items List

None
Open/ Execute a selected file
Open URL in default browser
Change display output
Brightness up
Brightness down
Volume up
Volume down
Volume mute
Launch on-screen keyboard
Launch Windows Mobility Center
Launch File Explorer

Using mSATA SSD

Your tablet is equipped with mSATA SSD for data storage. The mSATA SSD is removable for convenience. It can **ONLY** be removed while power is **OFF**. To remove the mSATA SSD module, please follow the steps below:

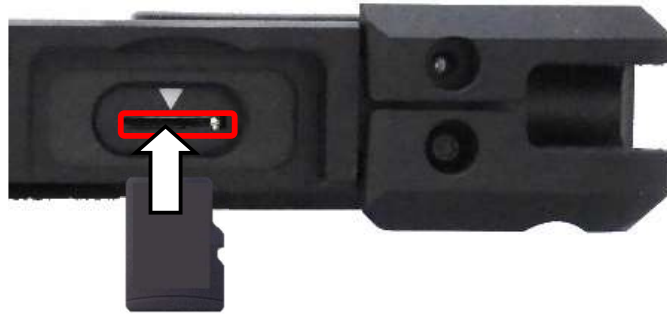
1. Loosen the screws on Back Door Cover, and then remove the cover.	
2. Hold the two ends of the mSATA SSD module.	
3. Remove the mSATA SSD module from the connector.	

Note:

- Do not expose mSATA SSD directly to high temperature, high humidity, and other hazardous environment. NEVER try to disassemble the module. Static discharge may destroy your device and data.

Using micro SD Cards

Your tablet computer is equipped with a micro SD card slot. The slot supports SDHC, SDXC, UHS-1 type micro SD cards. To avoid damages caused by misinsertion, please insert your micro SD card into the card slot properly with the connectors facing **down**, as shown below.



Using Kensington Lock Slot



Loop the lock cable around a stationary object such as a table and plug the Kensington Lock into the Kensington Lock Slot to lock it.

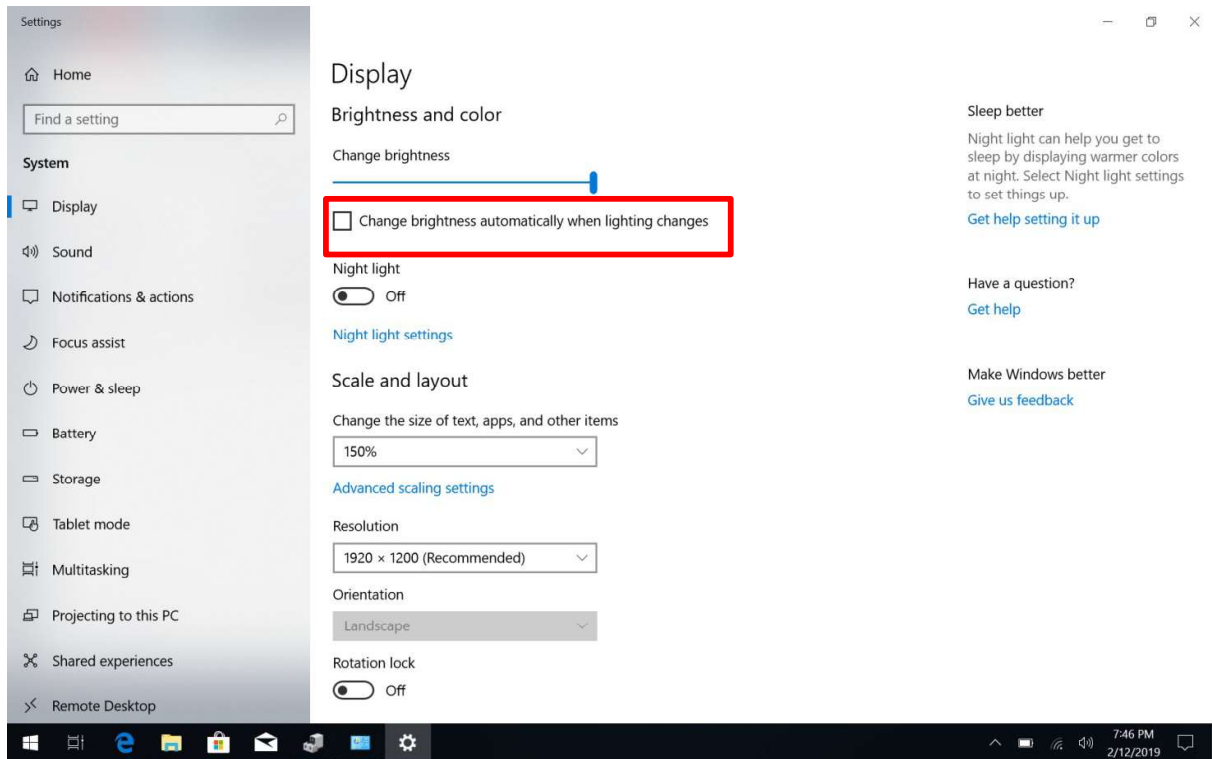
Note:

- *Kensington Lock is a widely available 3rd party product.*

Using Light Sensor

Light sensor can detect the ambient light and adjust the brightness of your tablet computer, hence improving user experience and power savings.

Setting → Display → “Change brightness automatically when lighting changes”



Mounting Docklite DLDS

Docklite acts as docking unit or port enhancer. It contains more ports that are not available on system unit.

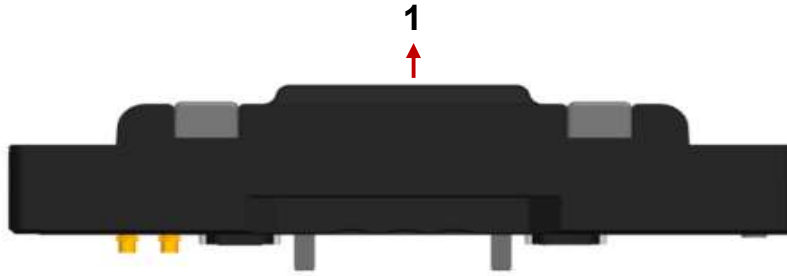
To mount a Docklite DLDS

1. Align the docking connector.
2. Attach Docklite.
3. Fix the screws.



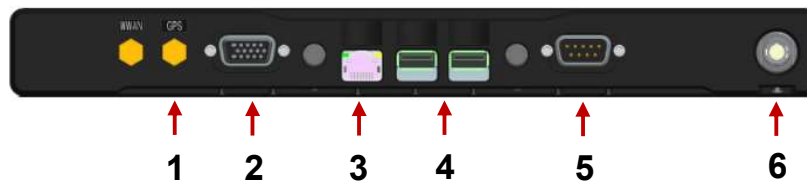
Docklite DLDS Ports

Top



1. Docking Connector

Bottom



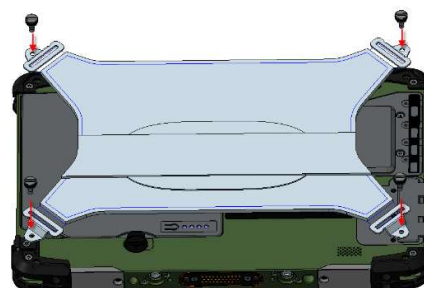
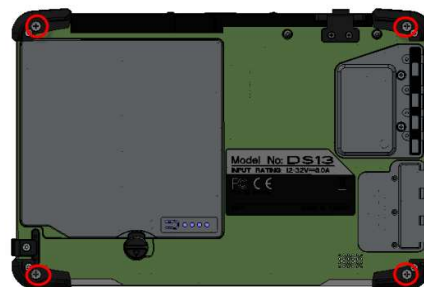
1. Optional GPS Antenna Connector (SMA)
2. VGA x 1
3. MLAN RJ45 x 1
4. USB 2.0 x 2
5. DB9 x 1
6. DC-In (Fischer 3 pin) x 1

Installing Hand Strap

Hand Strap allows users to hold and carry the device with one hand.

To install Hand Strap

1. Remove the M4 screws x 4 on the bumpers.
2. Align the Hand Strap to the device.
3. Fixed the Hand Strap to the device using Handle Screw (M4*7) x 4.



Chapter3- Managing Power

AC Adapter

The AC adapter performs two functions:

- It powers the computer from an external AC source.
-
- It charges the computer battery.

The adapter automatically detects the AC line voltage (110V or 220V) and adjusts accordingly.

The following are recommended when using the AC adapter:

- Use a properly grounded AC outlet.
- Use one AC outlet exclusively for the computer. Having other appliances on the same line may cause interference.
- Use a power strip with built-in surge protection.

Connect the AC adapter:

- Plug the AC cord to the adapter.
- Plug the other end of the AC cord into the wall outlet. Make sure the green LED on the adapter turns on.
- Attach the DC plug into the power jack of the computer.

AC Adapter Indicator

The green LED indicates that AC power is ready.

Battery

The computer will automatically switch to battery when the external power source (AC adapter or optional vehicle adapter) is disconnected.

Battery Power Saving Tips

The computer comes with an intelligent power-saving feature. You may extend the battery life by:

- Setup power saving functions in Operating System Power Management options (e.g. Windows Power Options).
- Lower the intensity of the display by brightness control.
- Turn the computer into standby (by Sleep or Power button) when it is temporarily not in use.
- Shut down the computer when it will not be in use for longer period of time.

Battery Low

When the battery is nearly exhausted, the computer gives the following “Battery Low” warnings:

- Windows battery low warning.
- The power LED flashes.

Once the “Battery Low” warning occurs, please:

- Save and close the files you are currently working on then shut down the computer.
- Plug in AC or vehicle adapter to recharge the battery.

Charging the Battery

Plug in the AC adapter to start the battery charging. If the battery is already full, the sense circuitry will stop high current charge within several minutes.

Charge indicator turns ON when the battery is charging and turns OFF when the battery charging is completed.

Battery Shut Down Mode

The battery is designed with Shutdown Mode and it will automatically enter this mode to prolong its storage time and to avoid itself from over-discharging. Shutdown Mode will be activated:

- When the battery itself is not in use for over 45 days

The battery in Shutdown Mode may be sustained for approximately 180 days. To deactivate Shutdown Mode, please connect battery to the handheld and then to the AC Adapter. The charge indicator lights orange means the deactivation of Shutdown Mode has completed.

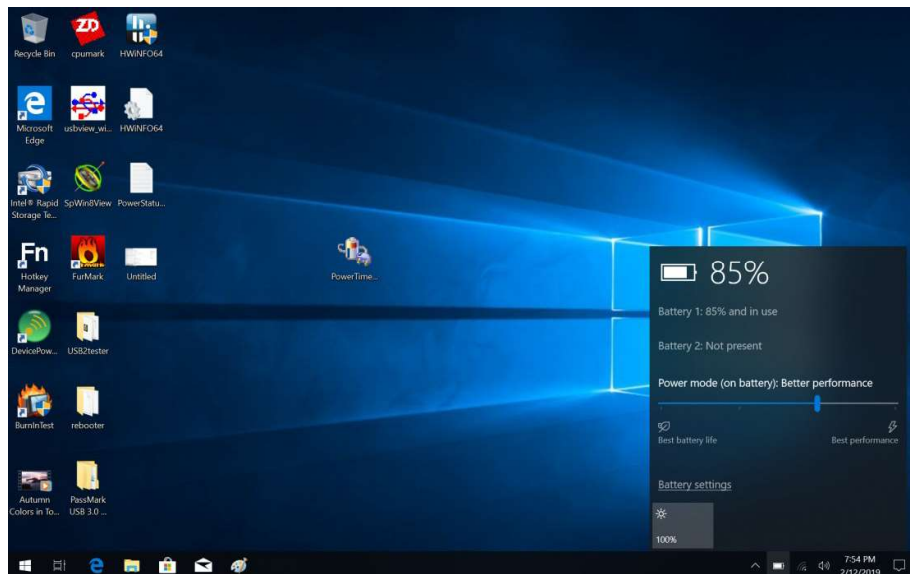
Battery Characteristics

Battery power will decrease gradually in storage. The rate depends on “self-discharge rate” and the storage environment. Self-discharge rate of rechargeable batteries is approximately 1% per day. High humidity and high temperature accelerate discharge. Very low temperature may “freeze” the battery chemicals thus decreases the capacity. The following shows some guidelines for users to maintain the battery.

1. If the battery will not be used for a long period of time, it is suggested to do the procedure every six months: discharge the battery to 0%, charge to 100%, and then discharge to 50% to store the battery. For the battery without using for more than 2 years, it may result in battery aging and is not recommended to use it.
2. About self-discharge rate, it is related to storage temperature. When store the battery in $-20^{\circ}\text{C}\sim 20^{\circ}\text{C}$ environment, the battery may self-discharge to 0% less than one year; when in $-20^{\circ}\text{C}\sim 45^{\circ}\text{C}$, it may self-discharge to 0% less than three month; when in $-20^{\circ}\text{C}\sim 60^{\circ}\text{C}$, it may self-discharge to 0% less than one month.

Battery Level

You may check battery status from Operating System. In Windows, you can click the power/battery icon to reveal the battery gauge window. The following is the illustration of Battery Gauge in Windows OS.



An alternative way to check the battery level is by viewing the battery gauge on the battery pack. By pressing the  button, indicators will be on. There are four indicators, and the more indicators are on, the more power remains in the battery. In other words, if the capacity of the battery pack is full, all indicators will be on, and if the capacity is nearly drained, no indicator will be on.



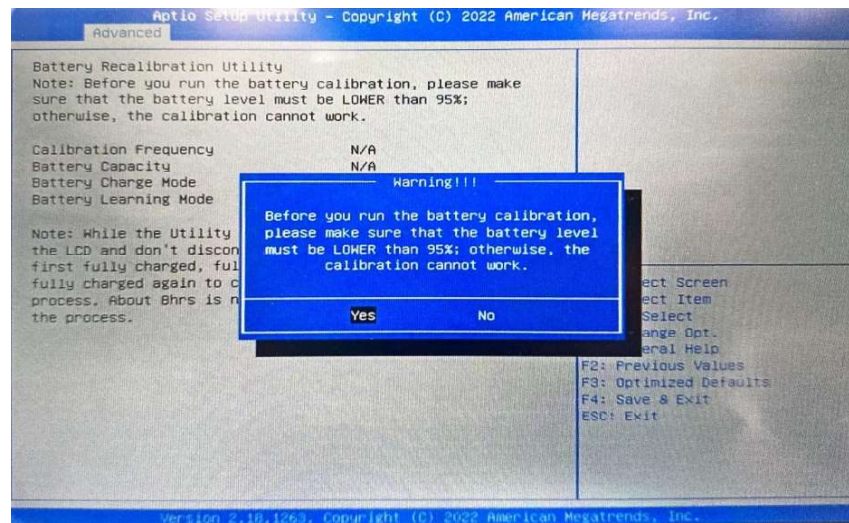
Note:

- *The battery gauge should only be used as a reference. Please do not expect it to show the exact amount of the power remaining. There is no memory effect on Lithium Ion battery cells. However, discharge the battery to nearly empty every month will help calibrating the internal gauge.*

Battery Recalibration

Battery recalibration allows a user to calibrate the GAUGE IC parameter of the battery pack. When the battery stays fully charged or in a low charge state for a long period of time, it causes the battery gauge to have some minor discrepancies. Therefore, users are recommended to carry out battery recalibration to correctly calibrate the battery GAUGE IC. To perform battery recalibration, please follow the steps as below:

1. Update BIOS & EC to the latest version.
2. Insert the battery to the computer, and connect it to AC adapter.
3. Enter the BIOS => Choose "Advanced menu" => Choose "Battery Recalibration" => Press "Enter".
4. When the "Start Battery Recalibration" pop-up appears, press "Yes" to continue. (Before you run the battery calibration, please make sure that the battery level must be LOWER than 95%; otherwise, the calibration cannot work.)



5. The recalibration is now processing. You can see the following recalibration status on the screen:

- Calibration Frequency: How many times the calibration is processed
- Battery Capacity: Current battery capacity
- Battery Charge Mode: Charge/Discharge
- Battery Learning Mode: Normal (charge)/Learn (discharge)

6. A pop-up appears when the calibration is completed. Then click "OK".

7. Press "Yes" to reboot the computer when "Reset Without Saving" pop-up appears.

Note:

- *Do not turn off the LCD and do not remove AC adapter during the calibration.*
- *One cycle of recalibration process indicates "Charge to Full => Start Learn Mode => Discharge => Complete Learn Mode => Charge to Full". It will take approx. eight hours for a cycle.*
- *It requires five cycles to complete the battery recalibration. Then the recalibration will stop automatically.*
- *If you want to terminate the calibrating, simply shut down the computer by pressing Power Button or just press "CTRL+ALT+DEL" to restart.*

ACPI Support

Your computer supports ACPI (Advanced Configuration and Power Interface) for power management. With ACPI and an ACPI-compliant operating system (such as Microsoft Windows), this feature will allow you to reduce the power consumption and conserve energy. By supporting ACPI, the AC adapter LED and the Power indicator LED will show in different ways. The followings are detailed descriptions of LED indicators and their meanings:

Sleep:

AC adapter LED is ON (while connecting with power)

Power LED indicator is flashing Green; other LED indicators are OFF

Hibernate:

AC adapter LED is ON (while connecting with power)

Power LED indicator is OFF; other LED indicators are OFF

Shut down:

AC adapter LED is ON (while connecting with power)

Power LED indicator is OFF; other LED indicators are OFF

USB Fast Charging

Your tablet supports USB fast charging feature, enabling to quickly charge your fast-charging compatible devices. But note, fast charging is not supported in every power mode. The following table shows details for USB Charging information:

Mode		USB 3.0 Charging Features
Power off	AC	Fast charging supports
	Battery	No charging
Power on	AC	Normal charging
	Battery	Normal charging
S3	AC	Fast charging supports
	Battery	Fast charging supports

Chapter 4 - BIOS Setup

Press **[Del]** at boot up to enter BIOS setup. Use arrow keys to select options and **[+/-]** to modify them. When finished, move to **"Exit"** and press **[Enter]** then confirm save by pressing **[Y]**.

Main Menu

Aptio Setup Utility	
Main	Advanced Chipset Boot Security Save & Exit
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time Access Level EC Version Processor Information Name Type Speed Microcode Revision Total Memory ME FW Version Serial ATA Port 1 System Date System Time	Set the Date. Use Tab to switch between Date elements. →←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Note:

- The contents may vary depending on computer configurations.
- Incorrect settings may cause system malfunction. To correct it, restore the Optimized Defaults with F3.

Advanced Menu

Aptio Setup Utility					
Main	Advanced	Chipset	Boot	Security	Save & Exit
▶ CPU Configuration ▶ PCH-FW Configuration ▶ Platform Settings ▶ Intel® I210 Gigabit Network Connection ▶ Trusted Computing ▶ RF Device Control ▶ EC Thermal Control ▶ AC In boot Control ▶ USB Power Control ▶ Battery Recalibration ▶ IT8760 Super IO Configuration ▶ Intel® Bios Guard Technology ▶ Network Stack Configuration ▶ CSM Configuration				CPU Configuration Parameters	
				→←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	

Advanced Menu Selections

You can make the following selections on the Advanced Menu.

Feature	Options	Description
CPU Configuration	Disabled Enabled	CPU Configuration Parameters
PCH-FW Configuration	Firmware update Configuration	Configure Management Engine Technology Parameter
Platform Settings	EU USA	Platform related settings
Intel ® I210 Gigabit Network Connection	Link Speed	Auto Negotiated 10 Mbps Half 10 Mbps Full 100 Mbps Half 100 Mbps Full
	Wake On LAN	Disabled Enabled
Trusted Computing	Disabled Enabled	Trusted Computing Settings
RF Device Control	Not Present	GSM, GPS, Bluetooth®, WLAN
EC Thermal Control	60 C 65C 70 C 75 C 80C	EC Thermal Control Setting
AC In Boot	Disabled Enabled	AC In Boot Setting
USB Power Control	Disabled Enabled	USB Power Mode Setting: For AC Mode Only; Setting for S5 Enable/S5 Disable
Battery Recalibration	Yes No	Start Battery recalibration function
IT8760 Super IO Configuration	Serial Port 1 Configuration	Enable/ Disable Serial Port (COM)
	Serial Port 2 Configuration	Enable/ Disable Serial Port (COM)
Intel ® Bios Guard Technology	Disabled Enabled	Enable/ Disable Intel Bios Guard Support
Network Stack Configuration	Disabled Enabled	Enable/ Disable UEFI Network Stack
CSM Configuration	Disabled Enabled	Enable/ Disable CSM support

CPU Configuration Sub-Menu

Aptio Setup Utility		
Advanced		
Intel (VMX) Virtualization Technology	[Enabled]	VT-d capability
VT-d	[Enabled]	
Intel Trusted Execution Technology	[Enabled]	
Turbo Mode	[Enabled]	
		→←: Select Screen ↑↓: Select Item Enter: Select →/+: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

PCH-FW Configuration Sub-Menu

Aptio Setup Utility		
Advanced		
ME Firmware Version		Configure Management Engine Technology Parameters
ME Firmware Mode		
ME Firmware SKU		
AMT BIOS Features	[Disabled]	
▶ AMT Configuration		→←: Select Screen ↑↓: Select Item Enter: Select →/+: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
▶ Firmware Update Configuration		

Platform Settings Sub-Menu

Aptio Setup Utility	
Advanced	
Wireless Regulatory Domain Setting SAR [EU]	Set related parameter based on area.
	→←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Intel® I210 Gigabit Network Connection Sub-Menu

Aptio Setup Utility	
Advanced	
► NIC Configuration Blink LEDs UEFI Driver Adapter PBA Device Name Chip Type PCI Device ID PCI Address Link Status MAC Address Virtual MAC Address	Click to configure the network device port. →←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Aptio Setup Utility	
Advanced	
Link Speed Wake On LAN	[Auto Negotiated] [Enabled] Click to configure the network device port. →←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Trusted Computing Sub-Menu

Aptio Setup Utility		
Advanced		
Configuration Security Device Support [Enabled] No Security Device Found		Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
		→←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

RF Device Control Configuration Sub-Menu

Aptio Setup Utility		
Advanced		
RF Device Control GSM STATUS Not Present GPS STATUS Not Present BT STATUS Not Present WLAN STATUS Not Present		
		→←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

EC Thermal Control Sub-Menu

Aptio Setup Utility	
Advanced	
EC Thermal Control Thermal cooling trip point [75 C]	EC Thermal Control Setting →←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

AC In Boot Control Sub-Menu

Aptio Setup Utility	
Advanced	
AC In Boot AC In Boot Control [Disabled]	AC In Boot Setting →←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

USB Power Control Sub-Menu

Aptio Setup Utility	
Advanced	
USB Power Mode USB Power Control [Disabled]	USB Power Mode Setting: For AC Mode Only; Setting for S5 Enable/S5 Disable
	→←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Battery Recalibration Sub-Menu

Aptio Setup Utility	
Advanced	
Battery Recalibration Utility Note: Before you run the battery calibration, please make sure that the battery level must be LOWER than 95%; otherwise, the calibration cannot work.	Start Battery recalibration function
Calibration Frequency Battery Capacity Battery Charge Mode Battery Learning Mode Note: While the Utility is executing, please don't close the LCD and don't disconnect the AC adapter. The battery is first fully charged, fully discharged, and then it will be fully charged again to complete the battery recalibration process. About 8hrs is needed for the battery to completely the process.	→←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

IT8760 Super IO Configuration Sub-Menu

Aptio Setup Utility	
Advanced	
IT8760 Super IO Configuration Super IO Chip IT8760 ▶ Serial Port 1 Configuration ▶ Serial Port 2 Configuration	Set Parameters of Serial Port 1 (COMA) →←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Aptio Setup Utility	
Advanced	
Serial Port 1 Configuration Serial Port Device Settings [Enabled]	Enable or Disable Serial Port (COM) →←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Intel® Bios Guard Technology Sub-Menu

Aptio Setup Utility		
Advanced		
Intel Bios Guard Support	[Disabled]	Enable/ Disable Intel Bios Guard Support
		→←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Network Stack Configuration Sub-Menu

Aptio Setup Utility		
Advanced		
Network Stack	[Disabled]	Enable/Disable UEFI Network Stack
		→←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

CSM Configuration Sub-Menu

Aptio Setup Utility	
Advanced	
Compatibility Support Module Configuration	Enable/Disable CSM Support.
CSM Support [Disabled]	→←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Security Menu

Aptio Setup Utility	
Main	Advanced
Chipset	Security
Boot	Save & Exit
Password Description If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup. If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights. The password length must be in the following range; Minimum length 3 Maximum length 20 Administrator Password User Password HDD Security Configuration: P1: XXXXXXXXXXXXX ► Secure Boot	Set Administrator Password →←: Select Screen ↑↓: Select Item Enter: Select →/+: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

HDD Security Configuration Sub-Menu

Aptio Setup Utility		Security
HDD Password Description: Allows Access to Set, Modify and Clear HardDisk User and Master Passwords. User Password need to be installed for Enabling Security. Master Password can be Modified only when successfully unlocked with Master Password in POST. If the 'Set HDD Password' option is grayed out, do power cycle to enable the option again. HDD PASSWORD CONFIGURATION:		Set HDD User Password. ***Advisable to Power Cycle System after setting Hard Disk Passwords***. Discard or Save changes option in setup does not have any impact on HDD when password is set or removed. If the 'Set HDD User Password' option is grayed out, do power cycle to enable the option again.
Security Supported : Yes Security Enabled : No Security Locked : No Security Frozen : No HDD User Pwd Status : NOT INSTALLED HDD Master Pwd Status : INSTALLED		→←: Select Screen ↑↓: Select Item Enter: Select -/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Set User Password Set Master Password		

Setting Password

1. Once you set HDD passwords successfully, you must enter user password to boot in the future. The master password provides an alternative entry in case the user password is lost.
2. Clearing the master password in BIOS setup will also clear the current user password. Master password is used as a backup key, it's better not to be changed frequently.
3. You can set your master password and user password with a length between 1 and 32 characters. If you want to clear current password, type nothing when creating a new password.
4. After you set a password, "Pwd Status" will change from "NOT INSTALLED" to "INSTALLED" and the "security enabled" status will change to "YES".
5. Your setting will take effect after reboot.

Note:

- *If the master password is lost or it is not set earlier than the user password, losing the user password would make accessing impossible. So please set the master password at first and keep it carefully.*

Resetting Password

1. After typing an invalid user password three times, a message will show "HDD is locked". Pressing "Enter" will leave the screen message.
2. Press "F2" immediately to enter the BIOS setup where the lost users password could be cleared with the master password.
3. Once the HDD is locked, users have no right to access. You can only enter again by the correct user password or clear it by the master password.
4. A warm boot will cause HDD Security Frozen in the selection. Only a cold boot can lift the HDD Security frozen and allow further operations in the BIOS setup. (After a cold boot, users can try to enter again with the correct user password or just reset it with the master password)

Boot Menu

Aptio Setup Utility					
Main	Advanced	Chipset	Security	Boot	Save & Exit
FIXED BOOT ORDER Priorities				Set the system boot order.	
Boot Option #1		[UEFI Hard Disk: (PO: XXXXXXXXXXXXXXXX)]		→←: Select Screen ↑↓: Select Item Enter: Select —/+ : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
Boot Option #2		[UEFI NVME]			
Boot Option #3		[UEFI CD/DVD]			
Boot Option #4		[UEFI USB Device]			
Boot Option #5		[UEFI Network]			
Boot Option #6		[Hark Disk]			
Boot Option #7		[NVME]			
Boot Option #8		[CD/DVD]			
Boot Option #9		[USB Device]			
Boot Option #10		[Network]			
▶ UEFI Hard Disk Drive BBS Priorities					

The system will try to boot from device on top then the 2nd and so on. If there is more than one device in each category, only the device on top of sub-menu can boot up.

Save & Exit Menu

Aptio Setup Utility					
Main	Advanced	Chipset	Boot	Security	Save & Exit
Save Options Save Changes and Reset Discard Changes and Reset				Reset the system after saving the changes	
Default Options Restore Defaults				→←: Select Screen	
				↑↓: Select Item	
Boot Override ubuntu (P1: XXXXXXXXX) Launch EFI Shell from filesystem device				Enter: Select	
				→/+: Change Opt.	
				F1: General Help	
				F2: Previous Values	
				F3: Optimized Defaults	
				F4: Save & Exit	
				ESC: Exit	

Chapter 5 – Drivers and Applications

The Utility DVD includes all the drivers for the devices installed in your tablet computer. Please consult your dealer if there are any driver missing. Also, you could update the driver or check if there any driver need to be installed by "Windows device manager". Please check the "readme.txt" file on Utility DVD to get the information for driver installation.

Chapter 6 – Specifications

Platform

Intel® Kaby Lake-Y Platform

Processor

Intel® Ivy Bridge i7-7Y75 Processor ,4 MB Cache

Memory

16GB System Memory

- Industrial grade
- LPDDR3

Graphics

Intel® HD Graphics 615

Display

- Standard:
 - 10.1" WUXGA LCD
 - Resistive Multi-Touch Screen
 - Optical Bonding
 - Resolution: 1920 x 1200 pixels
 - Brightness (Min. ~ Typ.): 650~750 nits
- Optional:
 - Invisible mode on/ off

Note:

- *Invisible Mode On/Off controls all light sources on/off, including LCD B/L, LED Indicators & Keypad B/L. Invisible Mode trades-off with Fischer conn. x 1.*
- *Avoid leaving a stationary image on the LCD display for a long period to prevent image retention.*

Storage

- Removable mSATA SSD
- 128GB/256GB/512GB
- Industrial Grade

Buttons/Function Keys

- Power button (front side)
- Membrane Function Keys with LED Backlight

Audio

- HD Audio and mono Speakers
- Optional Embedded Digital Mic

I/O Ports

Left:

- Standard: Mini DisplayPort x 1/USB3.1 x 2 (the rightmost USB port, with a lightening mark on the cap, supports fast charging function)
- Optional: Mini DisplayPort x 1/USB3.1 x 1 /GLAN x 1
- Optional Fischer I/O:
Choose 1~4 out of 6 as below:
 - USB 2.0 x 1
 - COM x 2 (RS232 x 2 or RS232 x 1/RS422 x 1)
 - GLAN x 1
 - Audio X 1
 - Sealed Headset (Headphone out/Mic-in Combo) x 1
 -

Note:

- Sealed headset trades-off with invisible mode switch.
- Mini DisplayPort version: DisplayPort 1.1a.
- DS13 does not support Dual-Mode DisplayPort(DP++) so an active DisplayPort adapter is necessary.

Bottom:

- Docklite Connector: 32-pin POGO (Hot Swappable)
- Ext. ANT Signals x 2

Expansion ports:

- Standard Micro SD card slot

Power**AC Adapter**

- Input Voltage: AC 100 - 240V
- Frequency: 50/60 Hz
- Output Voltage: DC 19V
- Maximum Power: 90 Watts
- Dimensions: 133 mm (W) x 58mm (D) x 30mm (H)
- Weight: Approx. 400 g (0.88 lb.)

DC-In:

- 12~32V with BVA & Surge Protector
Default: Fischer 3 pin Connector

Battery Pack (BDSB3D):

- Type: Lithium Ion Cell
- Capacity: 10.8V/ 4560mAh
- Operating Temperature Charge: 10 ~ 45°C
Discharge: -20 ~ 60°C
- Dimensions: 138.8 mm (W) x 138 mm (D) x 9.7 mm (H)
- Weight: ≤ 280 gram (0.62 lb.)

Double Capacity Battery (BDSB3E):

- Type: Lithium Ion Cell
- Capacity: 10.8V/ 9120mAh
- Operating Temperature Charge: 10 ~ 45°C
Discharge: -20 ~ 60°C
- Dimensions: 138.8 mm (W) x 138.0 mm (D) x 16.7 mm (H)
- Weight: < 560 gram (1.23 lb.)

Note:

- *These battery packs are designed with Shut Down Mode feature.*
- *The battery LED indicators has no function when entering SDM.*
- *For more information, please refer to [Chapter 3 - Managing Power](#).*

Case

- CNC milled Aluminum
- Color: Black, NATO Green

Environmental Specifications

- Operating Temperature:
 - Standard: -20°C* ~ +60°C***
 - Optional: -30°C** ~ +60°C***
 - *LCD with Heater
- Storage Temp.: -40°C ~ +70°C

Note:

- *To ensure system stability, please connect your laptop to external power source when operating below 0°C and above 60°C ambient temperature.*

**Instant Cold Boot via AC Mode*

***Cold Boot via AC Mode, with LCD Heater.*

****via AC Mode.*

Certifications

CE, FCC, UKCA, RCM, WEEE, REACH, RoHS, IP65, MIL-STD-810G, Optional MIL-STD-461G (G.A.), Optional MIL-STD-461G (G.N.)

Dimensions and Weight

- Dimensions (W x D x H) : 286 x 193 x 27 mm
- Weight : 1.49 kg

Note:

- *Weight includes battery x 1, SSD x 1.*
- *Weight and dimensions vary depending on system configurations.*

Materials and Recycling

Materials of the computer are as follows:

Metal case: Aluminum alloy, AL6061T6

PCB: FR-4, UL 94V0

Battery: Rechargeable Lithium Ion cells

Packing: Carton: Unbleached paper

Cushion: Recyclable PE

Carrying bag: Recyclable PE Fiber

Quick Guide: Paper

Please recycle the parts according to local regulations.

Chapter 7 – Optional Devices

Communication

- WLAN/ Bluetooth®:
 - Intel Dual Band wireless- AC 9260
 - Board Form Factor: M.2 2230 E-key Card
 - WLAN Certified: 802.11 a/b/g/n/ac
 - Bluetooth®: Supports Bluetooth® 5.0
 - Interface: PCIe (WLAN)/USB (Bluetooth®)
- GNSS:
 - Ublox M8N (USB interface)

Trusted Platform Module (TPM2.0)

BIOS password and Kensington cable lock slot are available to safely secure your computer. Optional TPM (Trusted Platform Module) version 2.0 is also supported, preventing unauthorized access to your computer.

AMG Sensor Module

AMG Sensor Module is designed for automatic screen rotation when you turn the tablet computer from landscape to portrait and back. It is especially convenient for you to turn to an appropriate view when using different apps.

Mil. Fischer Connector

Optional Fischer connectors provide solutions for users to operate the device in harsh environments. Signals designed for usage include USB2.0, VGA, RS232 or RS422, GLAN, and Audio.

External Vehicle Adapter

The External Vehicle Adapter, EVA1275, is designed to directly connect equipment to the vehicle power system, converting the input voltage 12~32V to output 19V. Fischer 3-pin plug is available designed for DS11.

Docklite DLDS

The Docklite can attach to computer or stand unit for mobile or stationary operation.

- **Ports**

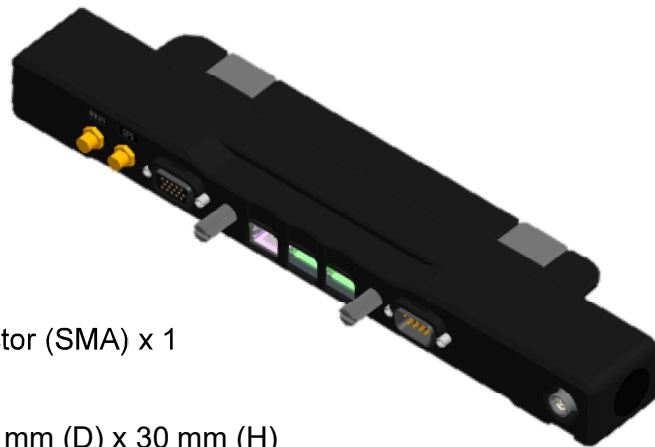
- Serial Port x 1
- USB 2.0 x 2,
- VGA x 1,
- DC-In x 1,
- MLAN RJ45 x 1
- Optional GPS Antenna Connector (SMA) x 1

- **Physical Characteristics**

- Dimensions: 280 mm (W) x 77 mm (D) x 30 mm (H)
- Weight: Approximately 0.44 kg

- **DC input:** 12~32V

- **Environmental & Certifications:** CE, FCC



Chapter 8 – Maintenance and Service

Cleaning

ALWAYS turn OFF the power, unplug the power cord and remove the battery before cleaning.

The exterior of the system and display may be wiped with a clean, soft, and lint-free cloth. If there is difficulty removing dirt, apply non-ammonia, non-alcohol based glass cleaner to the cloth and wipe.

An air gun is recommended for cleaning water and dust. For salty water please clean with fresh water then blow-dry with an air gun.

Troubleshooting

Should the tablet computer fail to function properly, the troubleshooting steps below may be followed.

Power Problems:

When I turn on the Tablet computer, it does not respond.

- If you are using battery power, check if the battery is charged
- If you are using AC power, ensure that the connection of AC adapter is correct.

I cannot return from Hibernation while on battery power

- The battery might be drained. Please plug the tablet into AC power.
- Hard reset the device by pressing the power button for 4 seconds

Unexpected or improper shutdown causes BIOS to reset to Optimized Default

- This could be a power problem. Please connect the AC power adapter to fix the abnormal shutdown problem.
- Minimize the configuration, i.e. remove extra peripherals and devices.
- Remove the modules one by one (SSD, Battery, etc.).
- Remove the software suspected.
- Set BIOS fail-safe default.
- Re-install operating system and application software.

Display Problems:**When encounter an image retention on the LCD display.**

Image retention is a common issue that may happen in any LCD display. It occurs when a stationary image is displayed for a period of time. This is not a permanent phenomenon and will disappear in a short period. Therefore, it is not harmful to the device.

Though the image retention will disappear later, follow one of the suggestions to eliminate this issue:

- Play a colorful fast-moving video full screen repeatedly. Search the video with keywords of "Screen Burn In Fix".
- Play a video of pixels transitioning between activation and deactivation. Search the video with keywords of "Image Retention Clearing Pattern".

Note:

➤ *Play the video repeatedly until the image retention has removed.*

To minimize the possibilities of image retention, please follow the suggested instructions below:

- Avoid leaving a stationary image on the display for a long period.
- Set a random pattern screen saver that changes the screen image repeatedly.
- Always turn off the device if not in use so that the display maintenance is performed.