Rugged Workstation

RW14

User's Guide

BC

Revision History

Revision	Date	Changes	Author
1.1.3	2025/07/09	Update Managing info.: Battery Update Specifications info.: Memory, Storage, Environmental Specifications, Certifications	Annabelle Wu
1.1.2	2024/02/27	Update Managing Power info.: Shut Down Mode feature and Battery Maintenance & Storage Recommendations Update Specifications info.: Memory and power	Annabelle Wu
1.1.1	2023/09/28	Change “Mobile Workstation” to “Rugged Workstation”	Annabelle Wu
1.1.0	2023/08/24	Correct e-RMA info.: MilDef Crete’s Website Update Specifications info.: Certifications and Battery Pack (BRWB3B)	Annabelle Wu
1.0.9	2023/06/27	Update Trademark info. Add Unpacking info. Change “BT” to “Bluetooth®”	Annabelle Wu
1.0.8	2022/11/18	Add Operating Information: Touchpad, Using Kensington Lock Slot, Installing Handle	Annabelle Wu
1.0.7	2022/06/13	Add info in Work with Power Button	Patricia Huang
1.0.6	2022/05/23	Update Specifications—Certifications Add UKCA info	Patricia Huang
1.0.5	2022/03/31	Update Memory MHz info	Patricia Huang
1.0.4	2021/11/11	Update BIOS Setup menu info	Patricia Huang
1.0.3	2021/08/10	Add a note in Battery Maintenance & Storage Recommendations Revise and add notes in Battery Recalibration	Patricia Huang
1.0.2	2021/06/28	Add a note in Battery Gauge	Patricia Huang
1.0.1	2021/04/09	Update CE info Update Memory capacity info Add Battery Characteristics info and correct note Add Battery operating temperature info Add Low Temp. Battery info	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 warming

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 workstation 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.

The device has been tested in accordance to FCC regulation Part 15 Subpart B, Subpart C, Subpart E and found the test results indeed meet the limitation of the relevant test standard(s) listed below:

FCC PART 15B § 15.10915.107 CLASS B
FCC SUBPART C § 15.247 (2018-10)
FCC SUBPART E § 15.407 (2018-10)

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

CE

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 62311 (2008)

3. **Radio Frequency Spectrum Usage**
   Applied Standard(s):
   EN 303 413 V1.1.1 : 2017-06
   EN 300 328 V2.1.1 : 2016-11
   EN 301 893 V2.1.1 : 2017-05

4. **Electromagnetic Compatibility Directive (2004/108/EC)**
   Applied Standard(s):
   EN 55032 (2015/A1: 2019)
   EN 55024 (2010/A1:2015)
   EN 61000-3-2 (2018)
   EN 61000-3-3 (2013/A1:2017)
   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: V2.2.3 (2019-11)
   EN 301 489-17: V3.1.1 (2017-02)
   EN 301 489-19: V2.1.1 (2019-04)

UKCA 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 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 62311:2020

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)

Power Conservation

This workstation consumes less power compared to conventional consumer workstations. 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 workstation:

- Only use an approved AC adapter designed for this workstation.
- 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 workstation, 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 workstation from accidentally turning on.

Battery Precautions

- Only use batteries designed for this workstation. Using incompatible battery types may cause explosion, leakage or damage to the workstation.
- Do not remove the battery from the workstation while the workstation 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 workstation 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 workstation 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), while discharging if the internal temperature of the battery is detected over 65°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 an end of the product 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 One - Getting Started

Unpacking

Caution:

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

The following components are along with your workstation. If there is any missing or damaged, please notify the dealer immediately.

- Workstation Unit
- AC Adapter
- AC Power Cord
- Utility DVD
- Quick Guide
- Handle

Quick Operation

- Open the battery cover, insert the battery, and secure the battery cover by tightening the screw.
- Connect the AC adapter with the workstation and start charging the battery for at least 10 minutes.
- Turn ON the workstation by pressing the power switch.

Primary Battery (Left Side)	Secondary Battery (Right Side)
	

Note:

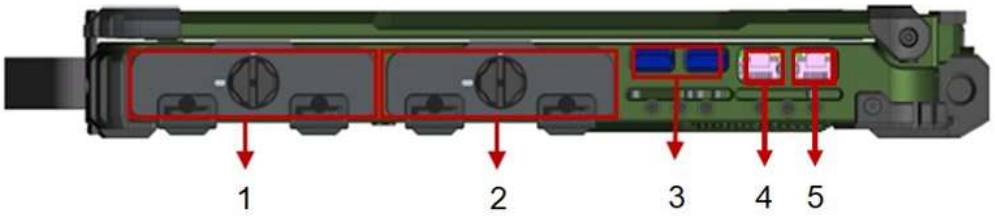
- *It is recommended to have the battery fully charged at the first time for the best battery performance.*
- *Drivers or applications installation may be necessary for further operation.*

Appearance Overview

Display and Base

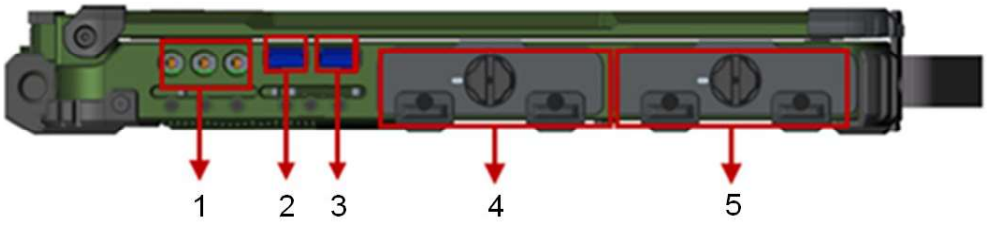
1. Embedded Antennas (Optional): GPS, WLAN/ Bluetooth® x 2
2. Optional Embedded Digital Mic
3. LED Indicators
4. Power Button (Black)
5. Touchpad
6. Left-click and Right-click

Right View



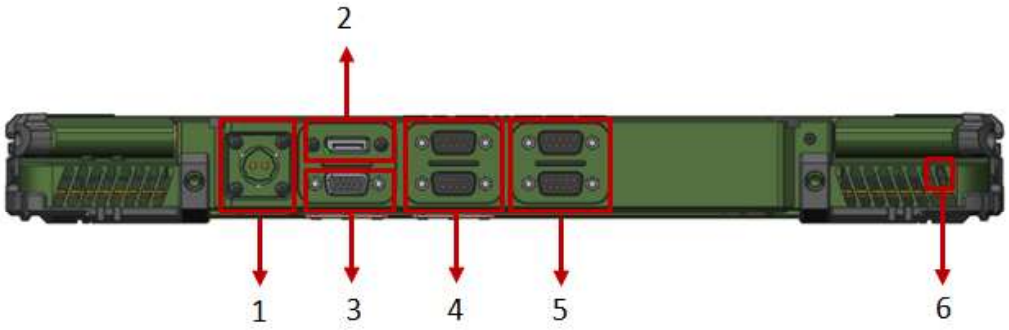
1. 2nd Battery
2. Optional 3rd SATAIII SSD
   Optional 4th SATAIII SSD
3. USB3.1 Gen. 2 x 2
4. Optional GLAN x 1
5. GLAN x 1

Left View



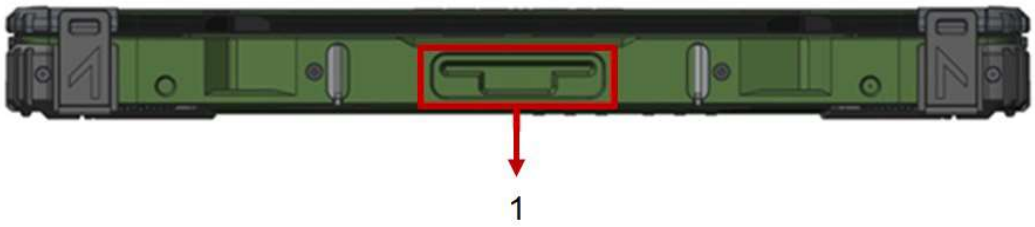
1. Audio/Line-in/Microphone x 1
2. USB 3.1 Gen. 2 x 1
3. USB 3.1 Gen. 2 x 1 (Fast Charging)
4. Standard 1st SATAIII SSD
   Optional 2nd SATAIII SSD
5. Primary Battery

Rear View



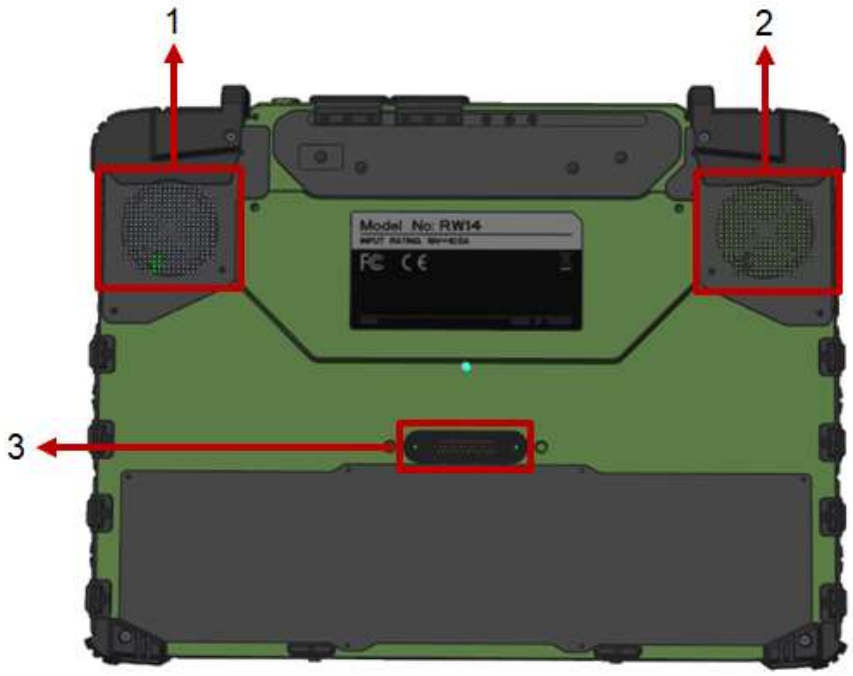
1. DC-In Conn. (Military 2 pin conn.)
2. Display port
3. VGA port
4. Serial DB9 x 2 (COM1~2)
5. Optional Serial DB9 x 2 (COM3~4)
6. Kensington Lock

Front View



1. Optional Smart Card Reader

Bottom View



1. 2nd FAN
2. 1st FAN
3. D/U port

Chapter Two - Operating Information

Workplace

A clean and moisture-free environment is preferred. Make room for air circulation. Remember to avoid areas from:

- Sudden or extreme changes in temperature.
- Extreme heat.
- Strong electromagnetic fields (near television set, motor rotation area, etc.).
- Dust or high humidity.

If it is necessary to work in a hostile environment, please regularly maintain your workstation by cleaning dust, water, and etc. to keep it in an optimal condition.

Ruggedness

This workstation is designed with rugged features such as vibration, shock, dust, and rain/ water protection. However, it is still necessary to provide appropriate protection while operating in harsh environments.

The workstation is also designed to withstand rainfall from top with mild wind blowing only. Please keep the keyboard facing up, i.e. normal operating direction, to maintain water resistance. NEVER immerse the unit in water, or spray water at an upside-down system. Doing so may cause permanent damage.

All connectors could be corroded if being exposed to water or moisture. Corrosion is accelerated if the power is ON. Please take proper water-resistant measures for cable connections. The DC jack and cables are sealed and may be operated with water splashing while attached. All port covers should be in place when no cable is attached.

Work with Power Button

The device 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:

- The device will boot up once you press the power button.
- When ambient temperature is under 5°C (the default setting for your workstation), 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 heating for 5 minutes, the system will be forced to boot up automatically.
- 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 is not supported under battery mode.

The following is a list of functions associated with your workstation'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 the power button for functions including:
   a. Power on the system.
   b. Force Shut Down.
   c. Sleep/Hibernate (Dependent on OS settings).

Operating System

Your workstation is designed to operate with Microsoft Windows 10 64-bit, Windows Server 2016 and 2019 Operating System. Please connect your workstation with an external USB-interface drive, such as a USB thumb drive, and start the OS installation.

Note:

- *The functions for RW14 with Windows Server 2016 and 2019 will remain functional except that the driver and function are not supported by display and WLAN/ Bluetooth®.*

Boot Up and POST

Boot up

The workstation turns ON and loads the operating system (such as Windows) into the system memory. This start-up procedure is called “boot up”.

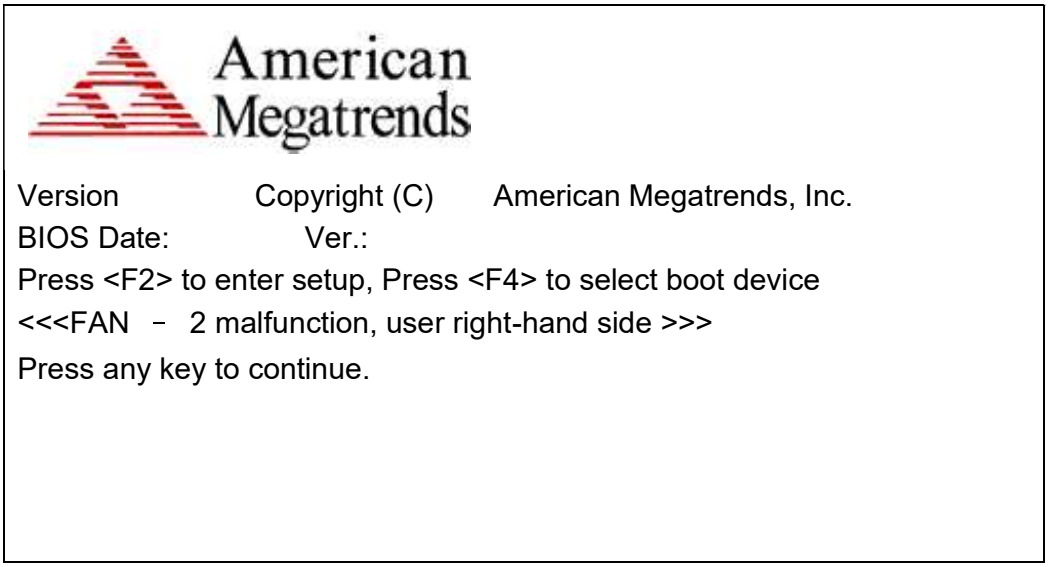
The ROM BIOS Power on Self-Test (POST)

Each time the workstation powers on, it automatically performs a self-test of its memory and hardware devices.

Fan Self-Test

If a fan malfunction is detected, the system will stop and show a message to notify the user. It’s not a recommended choice, but users can still decide to continue by pressing any key with fan malfunction.

If a fan malfunction is detected, your screen will show this information:



Note:

- *RW14 with nVIDIA® GeForce® GTX1050 MXM Card does not support multiple monitors before entering OS, so external monitor is unable to display in BIOS.*

Shut down

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

Force Shut Down

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

Sleep/ Hibernate

Sleep

Under “Sleep” mode, the system will temporarily save your work into the workstation’s RAM. If you want to start your workstation again, please press the power button to resume. Under Windows 10, you can enter this mode by directly clicking:

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

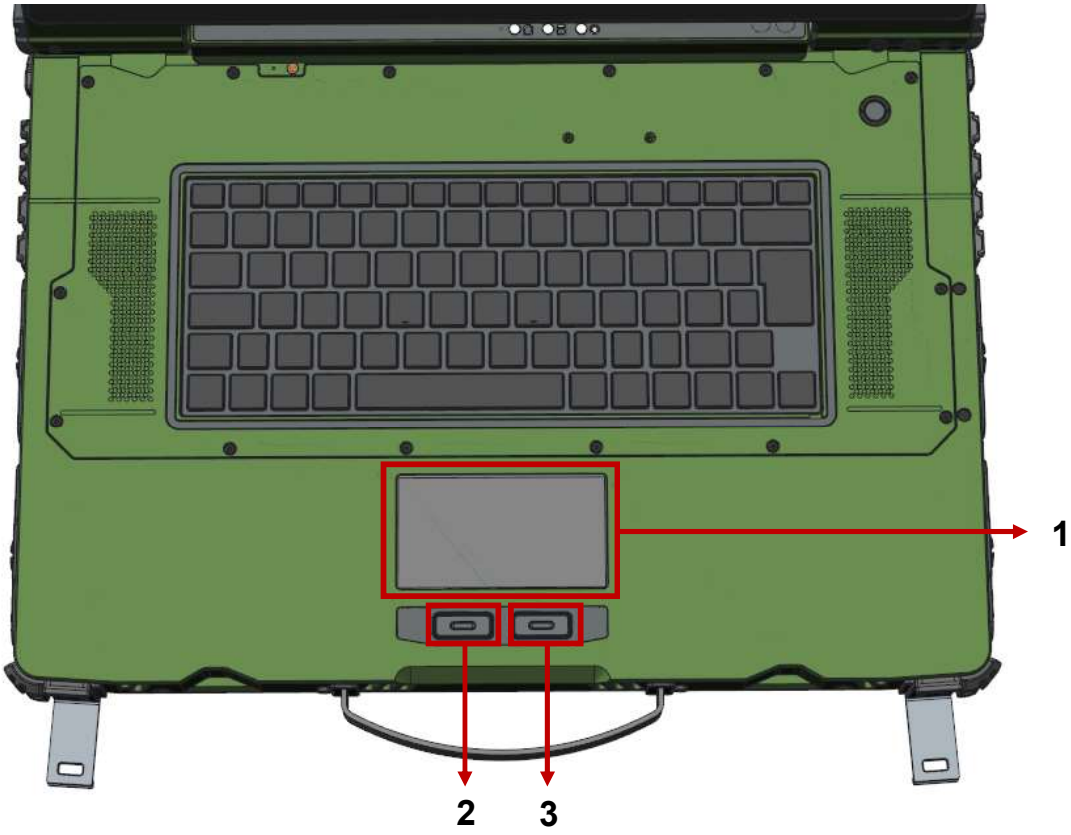
Hibernate

Under “Hibernate” mode, the system will save your work into SSD. If you want to start your workstation again, you need to press the power button. Under Windows, you can enter “Hibernate” mode by directly clicking:

Move the cursor to the lower left or lower-left corner of the screen, and then click “Settings” => Click “Power” => Click “Hibernate”.

Touchpad

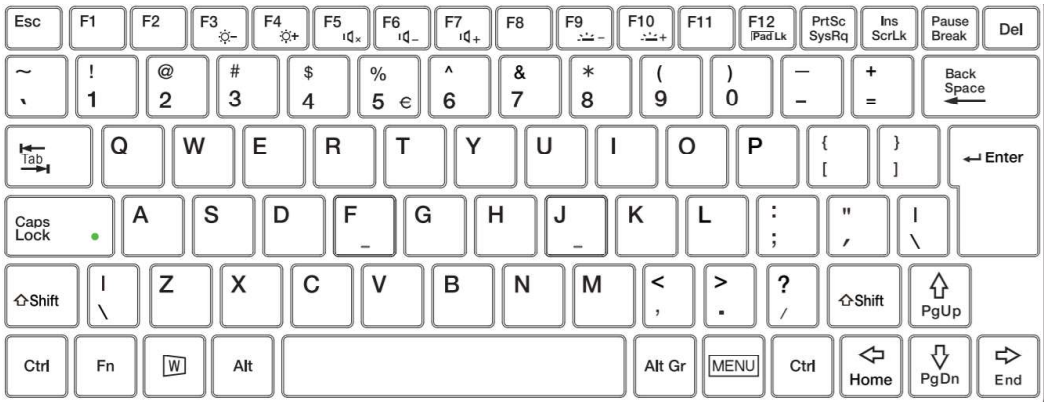
The touchpad can be enabled/ disabled by pressing **[Fn]** + **[F12]**. For more details, please refer the following table.



No.	Item	Function
1.	**Touchpad**	Single-Touch
2.	**Left-click button**	Function as LEFT button of mouse
3.	**Right-click button**	Function as RIGHT button of mouse

Keyboard

The keyboard is 83-Key full size with LED backlight. A sample layout is shown below.



Function Key Combinations

Key	Description
[Fn] + [F3]	Decrease LCD brightness
[Fn] + [F4]	Increase LCD brightness
[Fn] + [F5]	Mute/Unmute
[Fn] + [F6]	Volume down
[Fn] + [F7]	Volume up
[Fn] + [F9]	Decrease keyboard Backlight brightness
[Fn] + [F10]	Increase keyboard Backlight brightness
[Fn] + [F12]	Touchpad ON/OFF

LED Indicators

Your Workstation is designed with LED indicators to show workstation status. The description of LED indicators and colors are provided for your operational reference.

LED Indicator	Description
	Power/ S3 Indicator: Green/ Flashing Green*
	SSD/Heater Indicator: Green/Orange
	Charging/ Battery Low Indicator: Orange/ Flashing Orange

*When your workstation sleeps, the S3 indicator pulsates on and off slowly.

Managing Solid State Drive (SSD)

RW14 has 4 slots for 2.5" type/ 7mm height SATAIII SSD. First SSD was pre-installed as the standard configuration. You can have the additional SSD installed, up to four SSDs.

SSD1 & SDD2 at Left side	SSD3 & SDD4 at Right side
	

Note:

- *You need to purchase the SSD bracket for the additional SSD.*
- *RW14 supports up to 4 SSDs, the boot order will be SSD1, SSD2, SSD3 and SSD4. Hence, we recommend you put your Operating System SSD on the SSD slot 1. (It takes time for system to find the right one if you put the Operating System SSD at the other slot.)*

For setting up the RAID, please use the Intel® RST (Rapid Storage Technology) to lay your system foundation on RAID 0, 1, 5, 10 configurations. The are two boot modes to select, Legacy & UEFI.

Please follow the steps to use RAID function:

In BIOS Set Up:

1. Insert the required number of SSDs for RAID 0, 1, 5, 10, respectively.
2. Power on the workstation, and press [F2] to enter BIOS.
3. Select **Chipset => PCH-IO Configuration => SATA And RST Configuration => SATA Mode Selection => Intel RST Premium With Intel Optane System Acceleration =>Save Changes and Reset**
4. Reset the workstation, and press [F2] to enter BIOS.
5. Sleet **Advanced menu => Intel Rapid Storage Technology => Create RAID Volume**
6. Now, you can setup RAID configuration following the on-screen instructions. Or, you can refer to the User Guide of Intel® Rapid Storage Technology on the Intel official website.

Note:

- *It is recommended to use the same brand/size SSD to configure the RAID volume.*
- *Please refer to the official User Guide from Intel website for the detailed setting information.*

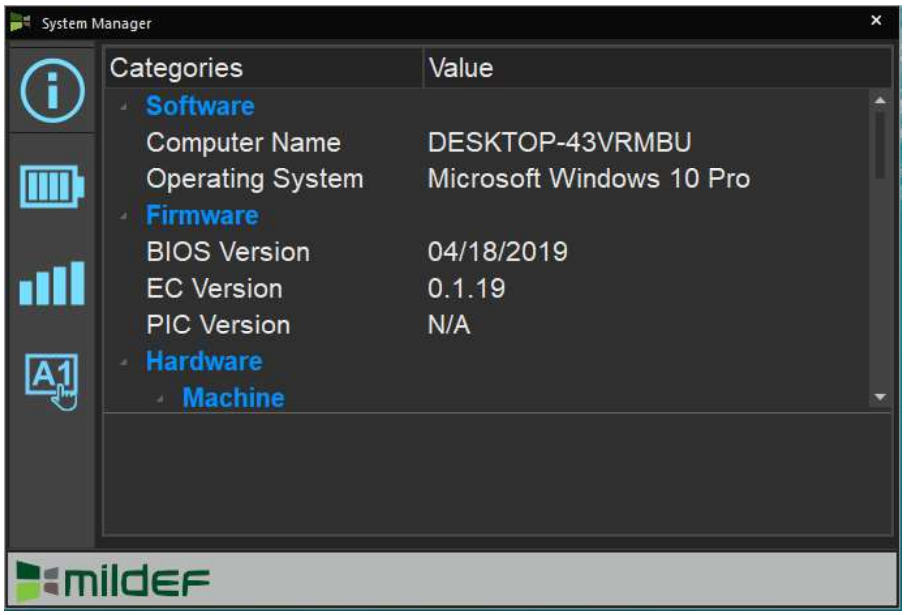
RTC

Battery backed up RTC (Real Time Clock/Calendar) is built in an on-board CMOS (Complementary Metal Oxide Semiconductor) chip. The RTC keeps track of the time and date while the workstation is off. The CMOS chip also stores system setup information.

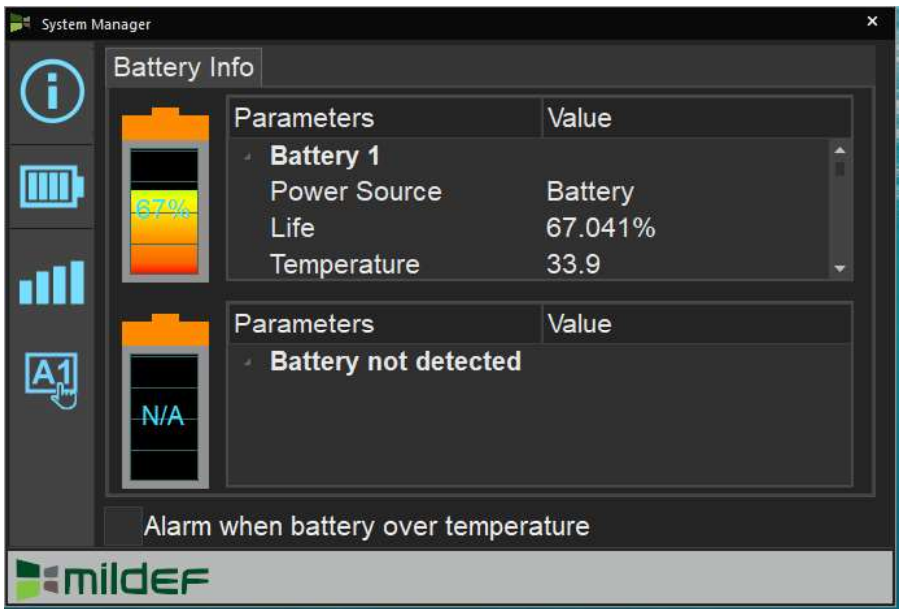
System Manager

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

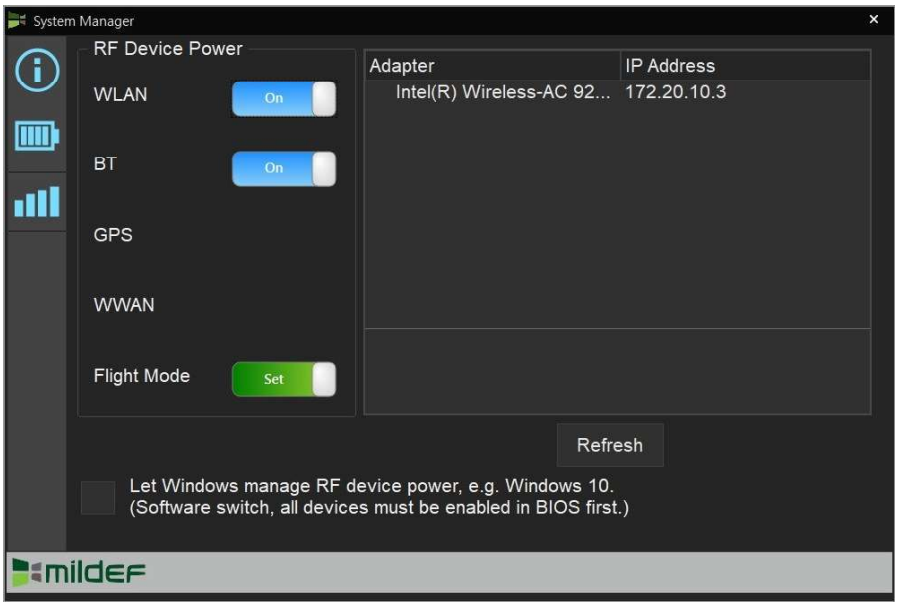
1. System information:



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

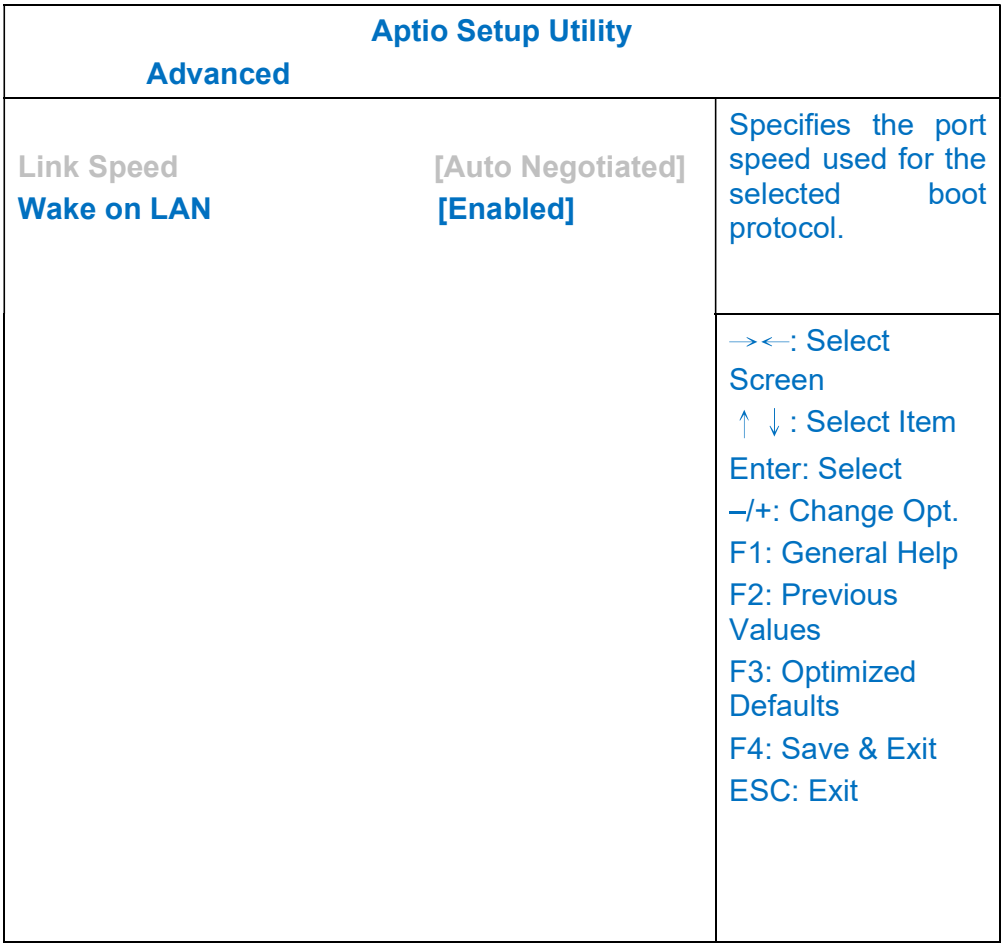
Note:

- *"System manager" is a universal app so some pages may be different according to your system. For example, function key setting page will be unavailable for those devices without function key.*

Setting Wake on LAN

Wake-on-LAN (WoL) is an Ethernet or Token ring workstation networking standard that allows a workstation to be turned on or awakened by a network message. Follow instructions to set WoL.

1. Enter BIOS set up → Advanced → Intel ® I210 Gigabit Network Connection → NIC Configuration → Set Wake on LAN enabled → Save and Exit BIOS



2. Windows System → Control panel → System → Device Manager → Network adapters→ double click “network adapters cards”

3. Power Manager → check “Allow the workstation to turn off this device to save power” and “Allow this device to wake workstation”

4. With MAC address of the target workstation, you can send Magic Packet to wake up your RW14 by suitable software.

Using Kensington Lock Slot

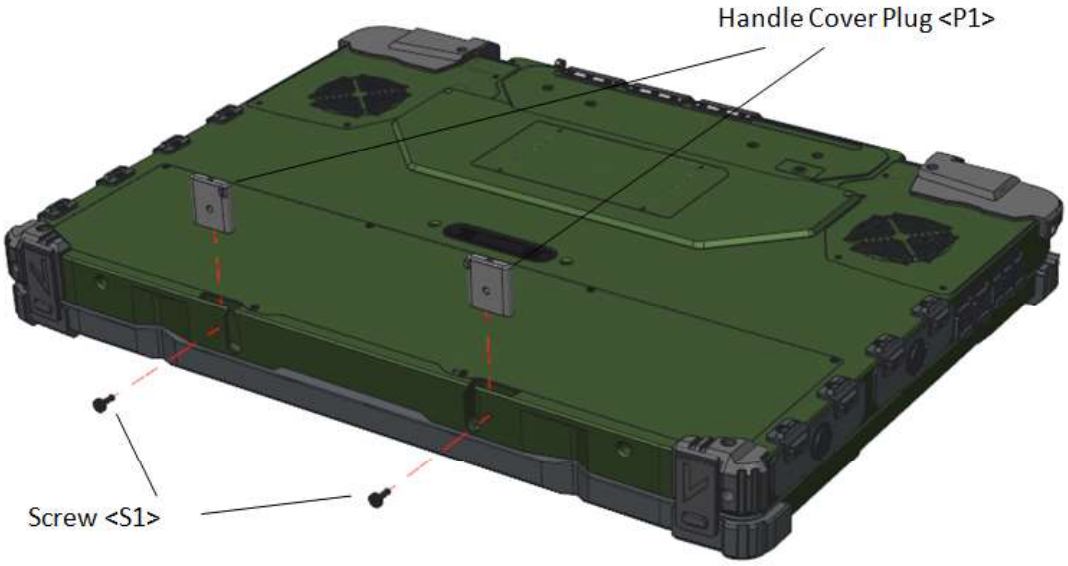
Loop the lock cable around a stationary object such as a table and plug the Kensington Lock into the Kensington Lock Slot to lock it.

Note:

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

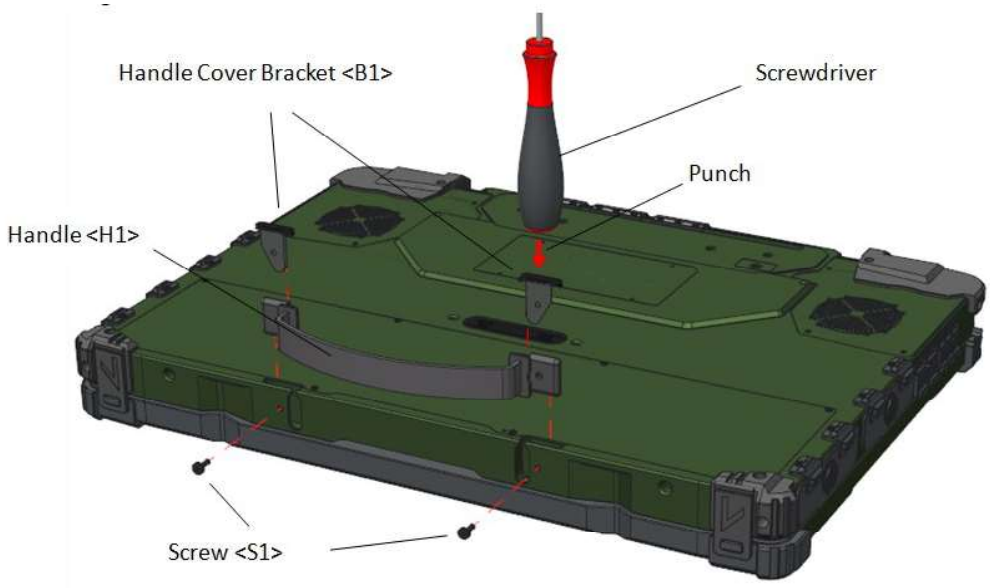
Installing Handle

To remove the handle cover plug
1. Remove the 2 Screws (M3*8L). <S1>
2. Remove the 2 Handle Cover Plug. <P1>

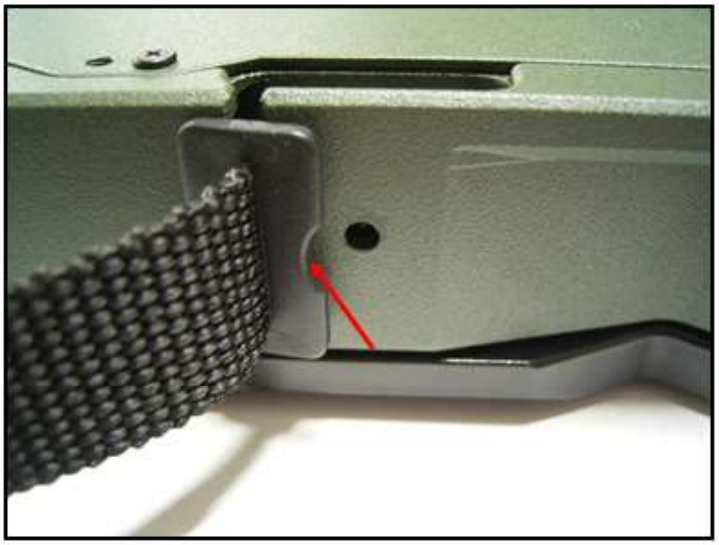


To set the handle
1. Insert the Handle into the slot of case. <H1> *notes
2. Set the 2 Handle Cover Bracket. <B1> *notes
3. Fix the Handle using 2 screws (M3*8L). <S1>

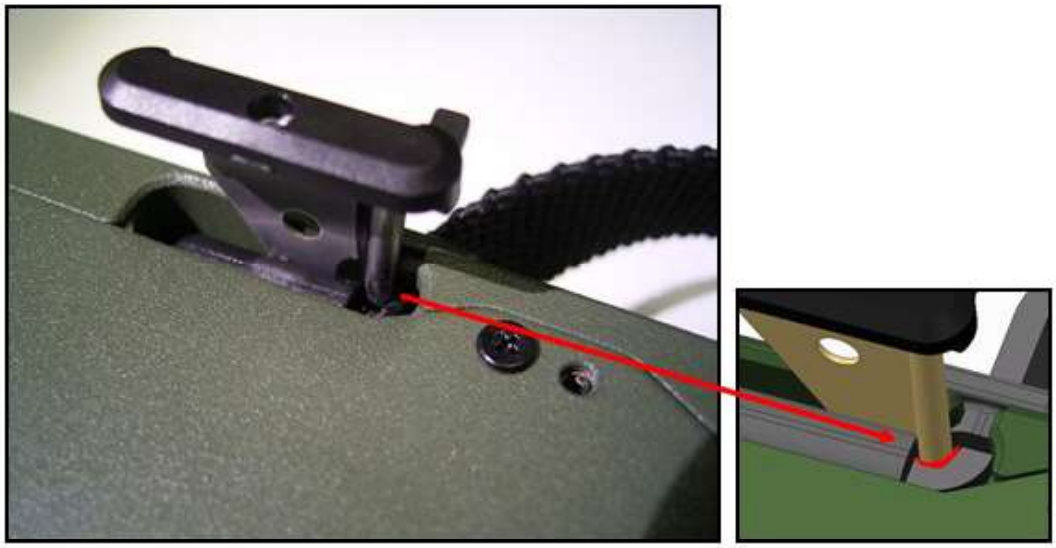
Screw tightening torque:12+/- 2kgf.cm



*Notes
Ensure the handle groove and screw hole match



Align the handle cover bracket to the hole, and then use a screwdriver to insert it.

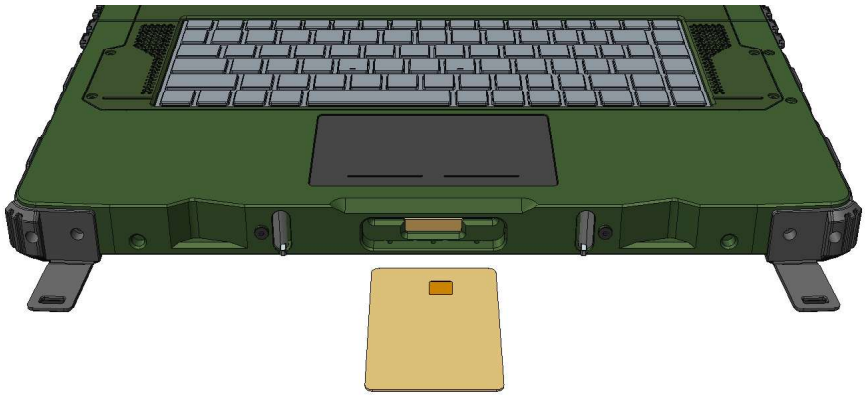


Smart Card Reader (Optional)

RW14 has a smart card slot, with an embedded microcontroller, smart cards have the unique ability to store large amounts of data, carry out their own on-card functions (e.g., encryption and mutual authentication), and interact intelligently with a smart card reader.

To insert a smart card:

1. Locate the smart card slot on the front side of the workstation and open the protective cover.
2. Plug the smart card, with its label and embedded chip facing up into the slot.



3. When a new card is seated, use the third-party smart card software to allow your workstation to read it.

To remove a smart card:

1. Make sure that the third-party smart card software is not accessing the smart card.
2. Pull the card out of the slot.
3. Close the cover.

Chapter Three - Managing Power

AC Adapter

The AC adapter performs two functions:

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

The adapter automatically detects the AC line voltage (100V or 240V) 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 workstation. Having other appliances on the same line may cause interference.

Connecting 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 workstation; and turn the lock ring clockwise to secure it.

Battery

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

Battery Low

When the battery is nearly exhausted, the workstation gives the following "Battery Low" warnings:

- Windows battery low warning (when operating system is Windows).
- The power LED flashes.

Once the Battery Low warning occurs, please:

- Save and close the files you are currently working on.
- Plug in the AC adapter to recharge the battery.

Charging the Battery

There are two battery packs in the workstation; on the left side is the primary battery, and on the right side is the second. When the workstation is connected to AC adapter, the primary battery will be charged first, and then the second battery. When the workstation is powered by the battery, secondary will be discharged first, and then the primary one. Attach the AC adapter or vehicle adapter to charge battery, when the battery is full, battery will automatically stop charging. You could check if the battery is being charged by "battery indicator LED", the LED is off when charging is finished.

	Charging (with power adapter attached)	**Discharging** (without power adapter attached)
Primary Battery (Left)	First priority	Second priority
2nd Battery (Right)	Second priority	First priority

Battery Charging Time

Charging Time		**Primary**	**Primary + Secondary**
AC Adapter	**System ON**	3~5 hours	7~10 hours
	System OFF	3~5 hours	7~10 hours

Note:

- *Charging Protection of the battery could be enabled in BIOS. The laptop will stop charging when battery percentage is above 80%.*

Optional Multi Battery Charger (MCRW)

A Multi Battery Charger is designed for the battery of RW14, with this charger, you could charge two battery packs at one time.

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 Maintenance & Storage Recommendations

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 decrease the capacity. The following are guidelines for battery maintenance:

- The battery life with system off is approximately 180 days, so it is suggested that the battery be charged every two months so to avoid over discharging.
- The battery should be removed if it will not be used for a long period of time (approximately one month).
- The battery should have 50% charge remaining before it is removed and be stored in the temperature range of -20°C to 20°C.
- The battery without using for more than 2 years may result in battery aging and it is not recommended to use.
- Self-discharge rate is related to storage temperature. The following recommendations may show how often a battery removed from the device needs to be charged in different storage temperatures.
  - In -20°C ~ 20°C environment, it is recommended to charge the battery every year;
  - In -20°C ~ 45°C environment, it is recommended to charge the battery every three months;
  - In -20°C ~ 60°C environment, it is recommended to charge the battery every month.

Battery Gauge

You may check battery status from battery gauge in Windows. Click the power/battery icon to reveal the battery gauge window.

Note:

- *If there are two batteries to be inserted, it is recommended to install the second battery after the status reading of the first battery is completed in OS, which will ensure the stability of battery status.*
- *Reading time may differ depending on models.*

Battery Power Saving Tips

The workstation 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.
- Use standby option when workstation is temporarily not in use.
- Shut down the workstation when it will not be for a long-time use.

Replacing Battery

At a low battery condition, you must connect to the power adapter or swap the battery to continue your task.

Note:

- *Please make sure that all the files you just modified were all already saved before swapping the battery to prevent any accidental data loss.*
- *If the Primary battery is not drained out, you could just swap the Secondary battery without power adapter attached.*

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.

It is recommended to carry out battery recalibration for a battery with the following two conditions:

- When it is constantly placed in the device with AC power attached, it is recommended to perform the recalibration approximately every 3 months.
- When it is not used for some time, for instance, approximately one month, it is recommended to perform the recalibration.

Note:

- *Actual time to conduct the recalibration depends on battery percentage and room temperatures. Please refer to "Battery Maintenance & Storage Recommendations" for precautions against over-discharging.*
- *Battery recalibration may not bring back batteries that are severely over-discharged.*

Please follow the steps as below to recalibrate your battery:

1. Update BIOS & EC to the latest version.
2. Insert the battery to the workstation, and connect it to AC adapter.
3. Enter the BIOS => Choose “Advanced menu” => Choose “Battery Recalibration” => Press “Enter”.
   (See Chapter4: BIOS Setup - Advanced - Battery Recalibration Sub-Menu)
4. When “Start Battery Recalibration” pop-up appears, press “Yes” to continue.
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 workstation when “Reset Without Saving” pop-up appears.

Note:

- *Please carry out the recalibration via the battery slot on the left.*
- *Do not turn off the LCD and do not remove AC adapter during the recalibration.*
- *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 workstation by pressing Power Button or just press "CTRL+ALT+DEL" to restart.*

Power Conservation

This workstation consumes much less power than conventional workstations. However, power consumption may be reduced by configuring the Power Management Setup properly.

It is recommended the power saving functions be enabled even when not running on battery power. Power Management will not degrade performance while saving power.

Supporting ACPI

Your workstation supports ACPI (Advanced Configuration and Power Interface) for power management. With ACPI and an ACPI-compliant operating system such as Windows, the feature will allow you to reduce the power consumption for energy saving. By supporting ACPI, the AC adapter LED and the Power indicator LED will show in different ways. The followings are the detailed description.

Sleep:

Power LED indicator is flashing Green*

*When your workstation sleeps, the S3 indicator pulsates on and off slowly.

Hibernate:

Power LED indicator is OFF.

Shut down:

Power LED indicator is OFF.

USB 3.1 Fast charging

RW14 provides one USB 3.1 fast charging port, which means that you can have faster charging than traditional standard USB 3.1 port. The following table shows details for USB 3.1 Fast Charging information:

Mode		USB3.0 Fast Charging port Features
Power off	AC	Fast charging
	Battery	No charging
Power on	AC	Normal charging
	Battery	Normal charging
S3	AC	Fast charging
	Battery	Fast charging

Note:

- *After enabling USB fast charging from USB CHARGE control in BIOS, please cold boot your workstation to activate this function.*

Chapter Four - BIOS Setup

Press **[F2]** 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]**.

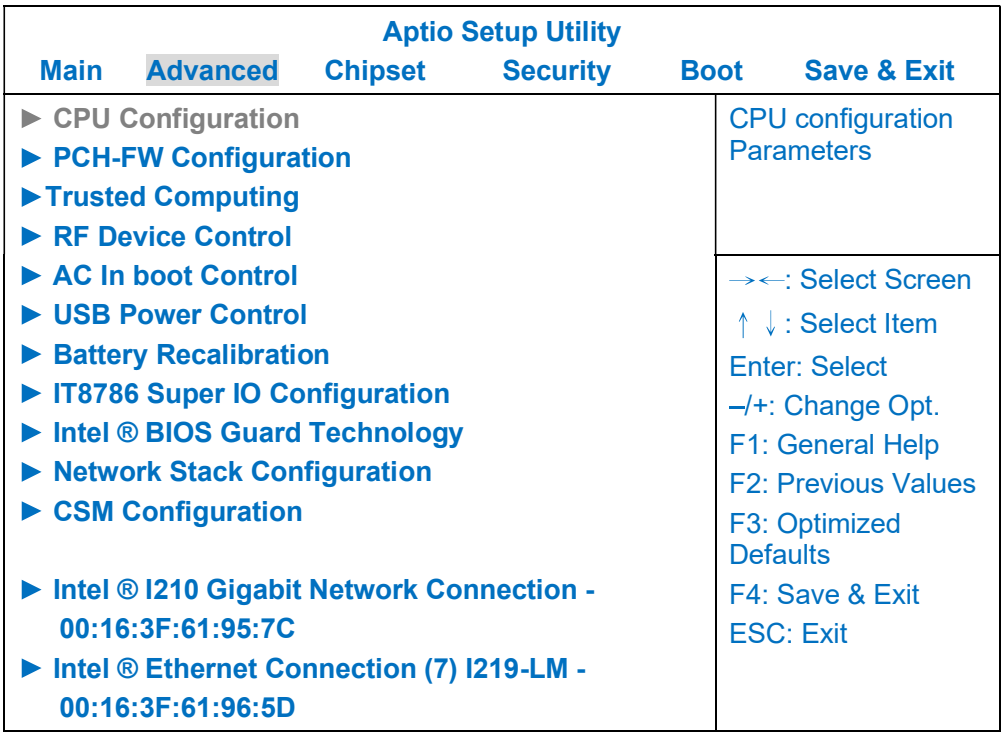
Main Menu

Aptio Setup Utility Main Advanced Chipset Security Boot Save & Exit	
BIOS Information **BIOS Vendor** **Core Version** **Compliancy** **Project Version** **Build Date and Time** **Access Level** **EC Version**	Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 2005-2099 Months: 1-12 Days: dependent on month
Processor Information **Name** **Type** **Speed** **Microcode Revision** **Total Memory** **ME FW Version** **ME firmware SKU** **Serial ATA Port 0** **Serial ATA Port 1** **Serial ATA Port 2**	→←: Select Screen ↑ ↓: Select Item Enter: Select –/+: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
System Date **System Time**	

Note:

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

Advanced Menu



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	Disabled Enabled	Configure Management Engine Technology Parameters
Trusted Computing	Disabled Enabled	Trusted Computing Settings
RF Device Control	Disabled Enabled	RF Device Control Setting
AC In Boot Control	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
IT8786 Super IO Configuration		System Super IO Chip Parameters.
Intel ® BIOS Guard Technology	Disabled Enabled	Enable/Disable Intel BIOS Guard Support
Network Stack Configuration	Disabled Enabled	Network Stack Settings
CSM Configuration	Disabled Enabled	Enable / Disable, Option ROM execution settings, etc.
Intel ® I210 Gigabit Network Connection		Configure Gigabit Ethernet device parameters
Intel ® Ethernet Connection (7) I219-LM		Configure Gigabit Ethernet device parameters

CPU Configuration Sub-Menu

Aptio Setup Utility Advanced		
Intel (VMX) Virtualization Technology	**[Enabled]**	Enables utilization of additional hardware capabilities provided by Intel ® Trusted Execution Technology. Changes require a full power cycle to take effect.
Intel Trusted Execution Technology	[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 FW Version ME Firmware Mode ME Firmware SKU AMT BIOS Features [Disabled] ►AMT Configuration ►Firmware Update Configuration	Configure Management Engine Technology Parameters
	→←: 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	
Me FW Image Re-Flash [Disabled] Local FW Update [Enabled]	Enable/Disable Me FW Image Re-Flash function.
	→←: 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	
TPM20 Device Found **Firmware Version:** **Vendor:** **Security Device Support** [Enable] **Pending operation** [None]	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 Sub-Menu

Aptio Setup Utility Advanced	
RF Device Control **GSM STATUS** Not Present **GPS STATUS** Present **GPS** [Enabled] **BT STATUS** Present **BT** [Enabled] **WLAN STATUS** Present **WLAN** [Enabled]	RF Device 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	
Calibration Frequency **N/A** **Battery Capacity** **N/A** **Battery Charge Mode** **N/A** **Battery Learning Mode** **N/A**	
Note: Only support single battery recalibration in the same time, while the Utility is executing, please don't close the LCD and don't disconnect the AC adaptor. The battery recalibration will follow the steps and take about 12hrs (by battery capacity) to complete the battery recalibration.	→←: Select Screen ↑ ↓: Select Item Enter: Select –/+: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Step 1 -> Fully Charged **N/A** **Step 2 -> Learning…** **N/A** **Step 3 -> Charge to 40%** **N/A** **Step 4 -> Learning…** **N/A** **Step 5 -> Charge to 40%** **N/A** **Step 6 -> Learning…** **N/A** **Step 7 -> Fully Charged** **N/A**	

IT8786 Super IO Configuration Sub-Menu

Aptio Setup Utility Advanced	
IT8786 Super IO Configuration **Super IO Chip** **IT8786** ▶Serial Port 1 Configuration ▶Serial Port 2 Configuration ▶Serial Port 3 Configuration ▶Serial Port 4 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 [Enabled] **Device Settings** COM 1 Mode Setting [RS232]	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

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	[Enabled]	Enable/Disable UEFI Network Stack
Ipv4 PXE Support	[Disabled]	
Ipv4 HTTP Support	[Disabled]	
Ipv6 PXE Support	[Disabled]	
Ipv6 HTTP Support	[Disabled]	
IPSEC Certificate	[Enabled]	
PXE boot wait time	0	
Media detect count	1	
		→←: 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 CSM Support [Disabled]	Enable/Disable CSM Support.
	→←: 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		Click to configure the network device port.
Blinks LEDs	0	
UEFI Driver	Intel ® PRO/1000 6.9.07 PCI-E	→←: Select Screen ↑ ↓: Select Item Enter: Select –/+: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Adapter PBA	000200-000	
Device Name	Intel ® I210 Gigabit Network Connection	
Chip Type	Intel i210	
PCI Device ID	1533	
PCI Address	03:00:00	
Link Status	[Disconnect]	
Mac Address	00:16:3F:61:95:7C	
Virtual MAC Address	00:00:00:00:00:00	

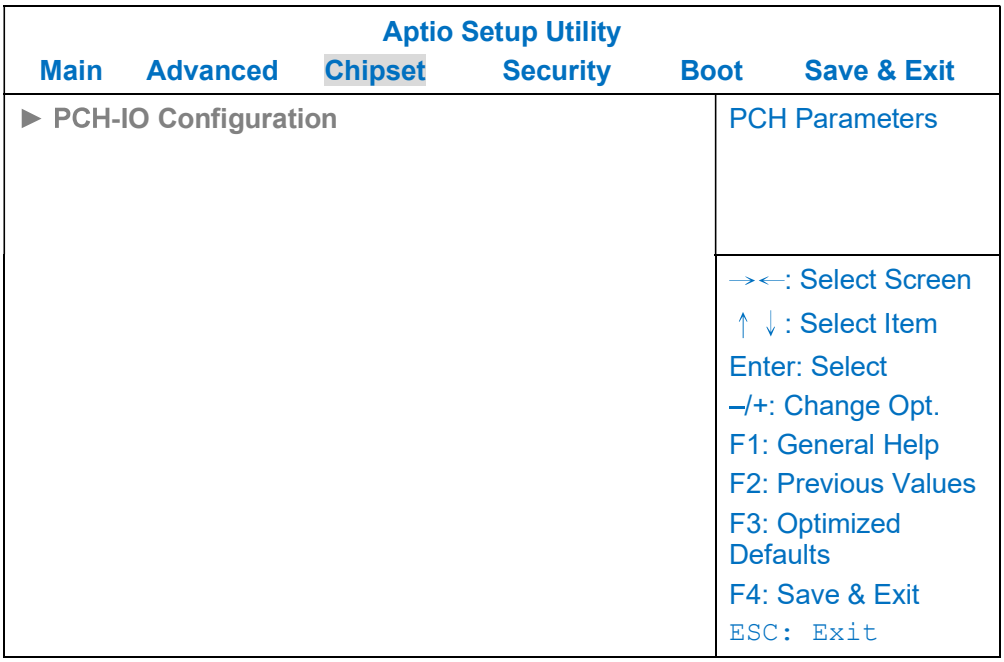
Aptio Setup Utility Advanced		
Link Speed	[Auto Negotiated]	Specifies the port speed used for the selected boot protocol.
Wake In LAN	[Disabled]	→←: Select Screen ↑ ↓: Select Item Enter: Select –/+: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Intel ® Ethernet Connection (7) I219-LM Sub-Menu

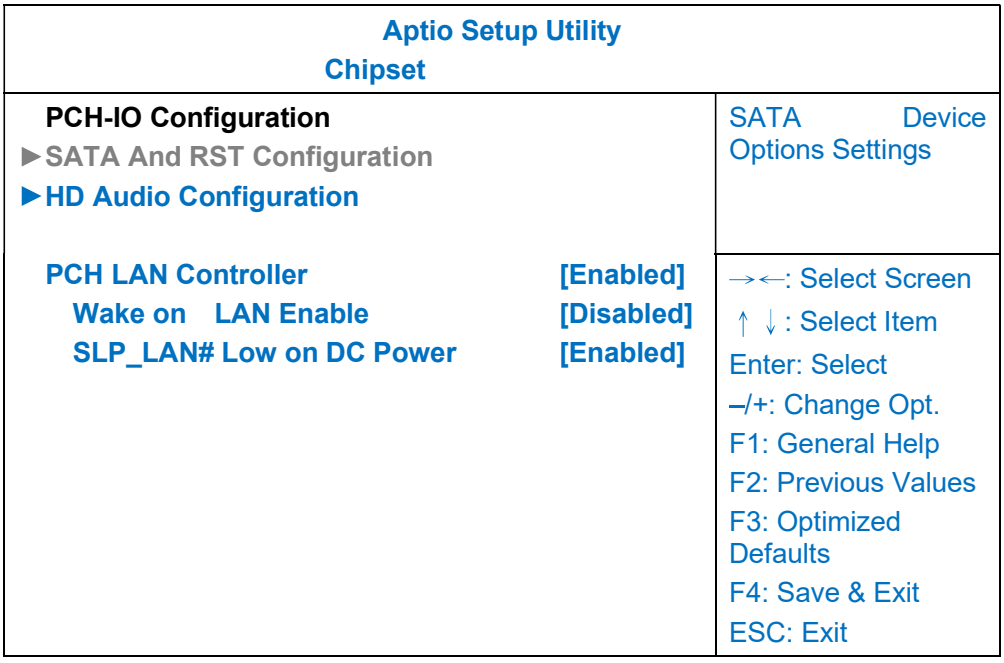
Aptio Setup Utility Advanced	
PORT CONFIGURATION MENU ►NIC Configuration **Blinks LEDs** 0 **PORT CONFIGURATION INFORMATION** **UEFI Driver:** **Adapter PBA:** **Chip Type** **PCI Device ID** **PCI Address** **Link Status** [Disconnected] **Mac Address**	Click to configure the network device port. →←: 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 [Auto Negotiated] **Wake In LAN** [Disabled]	Specifies the port speed used for the selected boot protocol. →←: Select Screen ↑ ↓: Select Item Enter: Select –/+: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

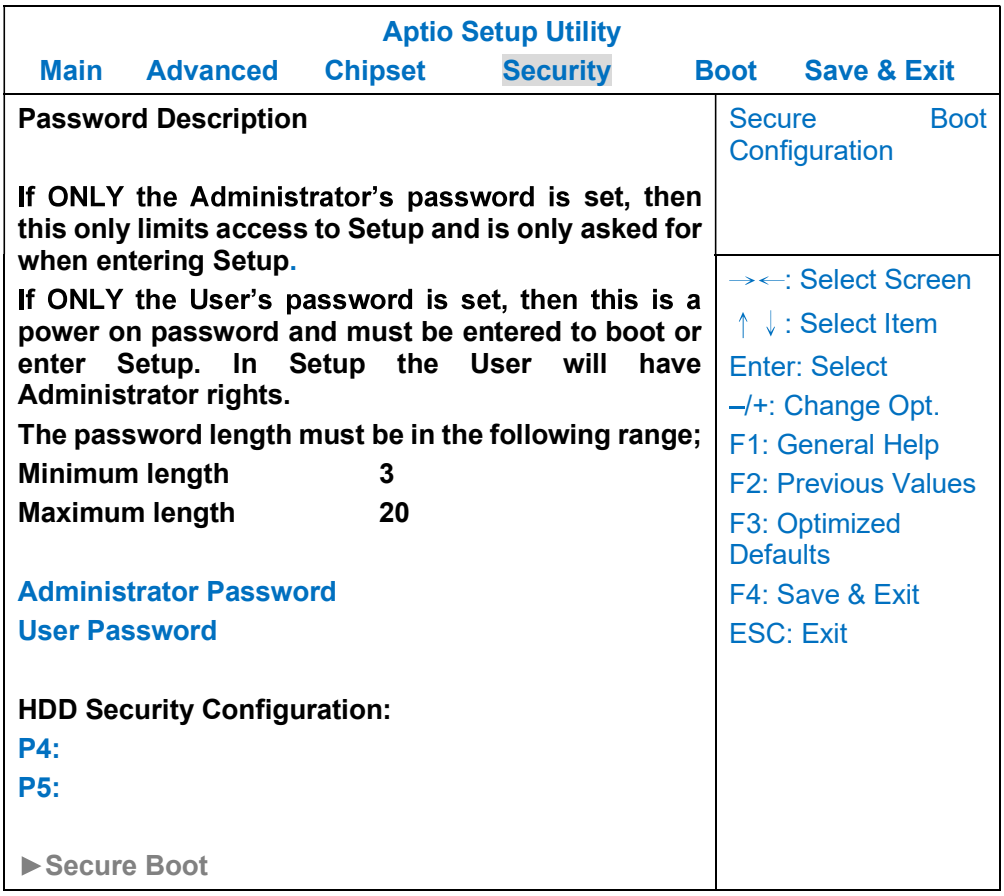
Chipset Menu



PCH-IO Configuration Sub-Menu



Security Menu



HDD Security Configuration Sub-Menu

Aptio Setup Utility Security	
HDD Password Description: **Allows Access to Set, Modify and Clear Hard Disk User and Master Password. User Password is mandatory to Enable HDD Security. If Master password is installed (optional), it can also be used to unlock the HDD. It the 'Set User Password' option is hidden, do power cycle to enable the option again.** **HDD PASSWORD CONFIGRATION:** **Security Supported :** **Yes** **Security Enabled :** **No** **Security Locked :** **No** **Security Frozen :** **No** **HDD User Pwd Status :** **NOT INSTALLED** **HDD Master Pwd Status :** **NOT INSTALLED** Set User Password Set Master Password	Set HDD User Password. ***Advisable to Power Cycle System after setting Hard Disk Passwords*** →←: Select Screen ↑ ↓: Select Item Enter: Select –/+: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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.*

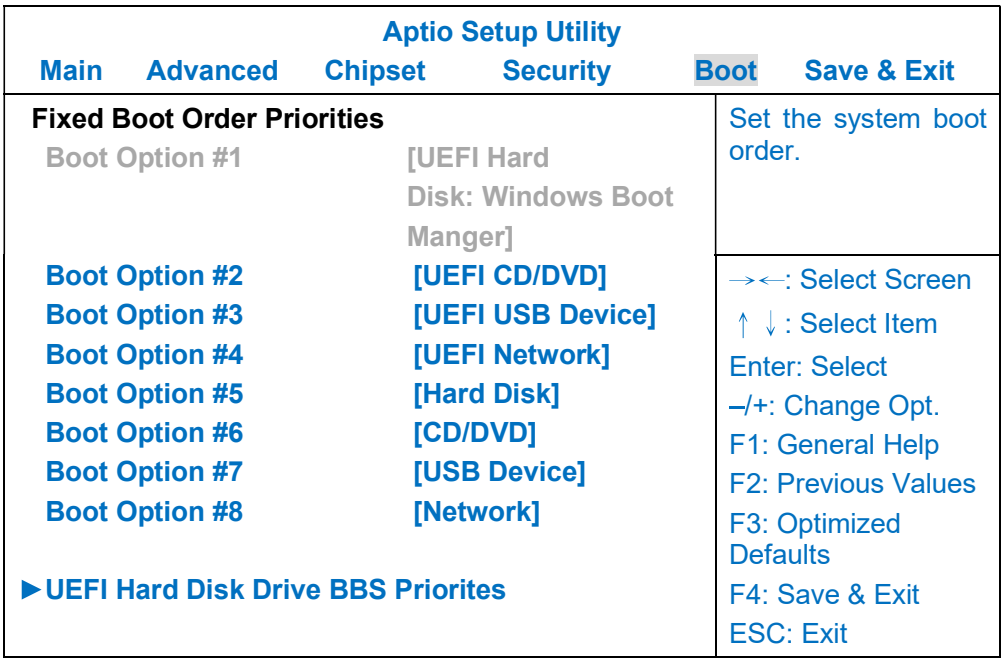
Resetting Password

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 user's 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)

Secure Boot Sub-Menu

Aptio Setup Utility Security		
System Mode	**Setup**	Secure Boot feature is Active if Secure Boot is Enabled. Platform Key (PK) is enrolled and the system is in User mode. The mode change requires platform reset.
Secure Boot	[Disabled] **Not Active**	
Secure Boot Mode	**[Custom]**	
►**Restore Factory Keys**		
►**Reset to Setup Mode**		
►**Key Management**		→←: Select Screen ↑ ↓: Select Item Enter: Select –/+: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Boot Menu



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 Security Boot Save & Exit

Save Options

Save Changes and Reset

Discard Changes and Reset

Default Options

Restore Defaults

Boot Override

Windows Boot Manager (P4: XXXXXXXX)

Launch EFI Shell from filesystem device

Reset the system after saving the changes

→←: Select Screen

↑ ↓: Select Item

Enter: Select

–/+: Change Opt.

F1: General Help

F2: Previous Values

F3: Optimized Defaults

F4: Save & Exit

ESC: Exit

Chapter Five - Drivers and Applications

The Utility DVD includes all the drivers for the installed devices in your workstation. Please consult the dealer if there is any driver missing. Also, through Device Manager in Windows, you are able to perform “Driver Update” or check if there are still drivers for the devices needed to be installed. Please check the readme file on Utility DVD to get the latest information before installing device drivers.

Note:

- *Please install the chipset driver first.*
- *If the system requests for reboot after installing drivers, please reboot your workstation first before installing other drivers.*

Chapter Six - Specifications

Platform

Intel® Coffee Lake Platform

Processor

Intel® Xeon® E-2176M Processor

Chipset

Intel® CM246 Chipset

Memory

- DDR4 SODIMM x 4
- 8GB/16GB/32GB
- DDR4 2400 MT/s
- For ECC Type, support up to 16GB/SO-DIMM
- For non-ECC Type, support up to 32GB/SO-DIMM
- Max. 64GB System Memory

Graphics

- Intel® UHD Graphics P630
- Optional nVIDIA® GeForce® GTX1050 4GB graphic add-on card

Display

- Standard**:**
  - 15.6” FHD LCD
  - Optical Bonding
  - Resolution: 1920 x 1080 pixels
  - Brightness (Min.~Typ.): 210~270 nits

- Optional**:**
  - Brightness (Min.~Typ.): 800~850 nits

Storage

- 2.5” SATAIII SSD
- 128GB/256GB/512GB/1TB
- Interface: SATAIII
- Height: 7mm
- Industrial grade

Note:

- *The SSD supports hot swap but not for the one with the Operating System.*
- *Standard: 1st SATAIII SSD (Left side)*
- *Optional:*
  2nd SATAIII SSD (Left side)
  3rd~4th SATAIII SSD (Right side)

Keyboard

- Number of keys: 83 Keys
- Key Travel: 1.5+/-0.2 mm
- Caps Lock LED (Green)

Touchpad

- Type: PS/2 Resistive Touchpad
- Life time: Over 5,000,000 strokes lifetime

Fan

- Dimensions: about 64(L) x 55(W) x 10(H) mm
- Weight: about 30 grams
- Rotation (impeller side view): CCW
- Bearing type: Fluid bearing
- Rated speed: 4350 RPM ± 10% AT 5.0 VDC
- MAX. air flow: 5.67 CFM
- MAX. static air pressure: 15.75 mmAq
- Noise level(at 50 cm): 36.8 dBA (MAX.: 38.8 dBA)
- Motor protection: auto restart, motor lock protection

I/O Ports

Left:

- Audio/Line-in/Microphone x 1
- USB 3.1 Gen. 2 x 1
- USB 3.1 Gen. 2 x 1 (with fast charging)

Right:

- USB 3.1 Gen. 2 x 2
- Optional 2nd GLAN x 1
- GLAN x 1

Rear:

- DC-in Connector x 1 (Military 2-pin)
- Display port x 1
- VGA x 1
- Standard: Serial DB9 x 2 (COM1~2)
- Optional: Serial DB9 x 2 (COM3~4)

Bottom:

- D/U port x 1

Note:

- *The elements of the instructional safeguard shall be as follows:*
- *element 1a: the symbol*  *, IEC 60417-6044 (2011-01)*
- *element 2: "High sound pressure" or equivalent wording*
- *element 3: "Hearing damage risk" or equivalent wording*
- *element 4: "Do not listen at high volume levels for long periods." Or equivalent wording*

Power

AC Adapter:

- AC Input: 100 - 240V
- Frequency: 50/60Hz
- DC Output: 19V/10.5A
- Maximum Power: 200 Watts

DC-in:

- Standard DC-in 19V
- Optional DC-in 12~32V (BVA & Surge Protector)

Note:

- *If you'd like to use DC-in 12V, please make sure the DC-in conn. is more than 12V, and the DC cable should withstand more than 17A.*

Battery Pack (BRWB3B):

- Type: Lithium Ion battery
- Capacity: 10.8V/5980mAh
- Operating Temperature: Charge: 10 ~ 45ºC; Discharge: -20 ~ 60ºC
- Weight: 370g
- Dimension: 142 mm (W) x 80 mm (D) x 14.5 mm (H)

Low Temp. Battery Pack (BRWB3C):

- Type: Lithium Ion battery
- Capacity: 10.8V/5000mAh
- Operating Temperature: Charge: 0 ~ 45ºC; Discharge: -30 ~ 60ºC
- Weight: 370g
- Dimension: 142 mm (W) x 80 mm (D) x 21 mm (H)

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
- Black/NATO Green

Environmental Specifications

- **Temperature**: Operating: -20 ºC* ~ +60ºC***
  Optional Operating: -30 ºC** ~ +60ºC***
  Storage: -40 ºC ~ +70ºC
- **Humidity**: 5~95% Non-condensing operating
  95% maximum storage
- **Altitude**: 0 ~ 4,572 meters (0 ~ 15,000 feet) operating

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*
***By sorting, need to choose the Low Temp. battery.*
****via AC Mode.*

Certifications

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

Note:

- *IP65 is tested without I/O caps.*
- *IP65 is not compliant when the I/O ports are attached with external connectors.*
- *IP65 is not compliant when the SCR cap is opened or attached with a Smart Card.*

System Unit Dimensions and Weight

- Dimensions (W x D x H): 392 x 302 x 43 mm
- Weight: 5.24 kg

Note:

- *Weight includes Weight includes DRAM x 4, WLAN/Bluetooth® Module, GPS, 2nd GLAN Card, battery x 2, SSD x 4, MXM, Digital Mic, BVA, COM3/4, Smart Card (Battery pack 330g, SSD 61g)*
- *Weight and dimensions vary depending on system configurations.*

Materials and Recycling

Materials of the workstation are as follows:

- Plastic Case: Recyclable UL grade PC + ABS GE C2800 or C6200
- Aluminum Case: AL6061T6
- Bracket: Aluminum 5052
- Bumper: Silicone Rubber, TPU
- PCB: FR-4, UL 94V0
- Battery: Rechargeable Lithium Ion
- Packing: Carton- Recycled/Recyclable Paper (unbleached)
  Cushion- Recyclable EPE
  Quick Guide- Recycled/Recyclable Paper

Please recycle the parts according to the local regulations.

Chapter Seven - Optional Devices

Graphics

- nVIDIA® GeForce® GTX1050 4GB graphic add-on card
- GPU: NVIDIA GeForce GTX1050
- NVIDIA® CUDA™ Cores: 640
- Core clock: 1354MHz
- Memory Size: 4GB GDDR5
- Memory Clock: 7.0 Gbps
- Memory Interface Width: 128-bit
- Max. Board power: 50W
- Form Factor: MXM graphics module version 3.1, Type A
- Dimension: 70 (L) x 82 (H) mm

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 (Backward compatible)
  - Interface: PCIe (WLAN)/USB (Bluetooth®)
- **GPS:**
  - Ublox M8N (USB interface)
- **2nd GLAN Card:**
  - Intel I210 GLAN Card
  - Mini PCIe full-size form factor

Trust Platform Module (TPM2.0)

There is an optional Trust Platform Module (TPM2.0) equipped with this workstation for users to strengthen the security.

With TPM, users are able to encrypt the folders and files directly and make the important file be more secure and be with an additional protection. In other words, your TPM-encrypted files are basically protected with two layers. Even if your TPM-encrypted files are hacked, the files can not to be read without passwords and TPM chipset.

COM 3/4 Additional Serial Ports

COM 3/ 4 supports RS232, RS422, and RS485 signal. For the types of signals, they are selectable in BIOS menu. Please follow the instructions below to select the signal required:

Select **Advanced => IT8786 Super IO => Serial Port 3 => COM 3 Mode Setting => RS232/ RS422/ RS485**

BVA & Surge Protector Module

BVA & Surge Protector Module is designed for all equipment to directly connect with the vehicle power system. Containing the reverse polarity protection and the breaking of high voltage input, the module is able to be against high 100V at 50ms surge.

Note:

- *If you'd like to use DC-in 12V, please make sure the DC-in conn. is more than 12V, and the DC cable should withstand more than 17A.*

Smart Card Reader

Accept a smart card for additional security feature.

Multi Battery Charger (MCRW)

The Multi Battery Charger is designed for the battery of RW14, with this charger, you could charge two battery packs at one time.

Electronic characteristics

- DC Input Range: 12 ~ 32V with BVA
- DC-in Conn:
  - Standard 2 pin Mil Conn. (200W AC Adapter)
  - Optional 3 pin Mil Conn. (90W AC Adapter)
- Charging Time: 4 hours
- CE/FCC Certified

Physical Characteristcs

- Dimensions (mm): 129.9(L) x 129.9(W) x 94(H)
- Weight: 325 g

Environmental Ratings

- Operating Temperature: 0 ~ 45°C
- Storage Temperature: -40 ~ 70°C

Chapter Eight - 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. Be sure not to turn the workstation upside down while there is water being applied.

Troubleshooting

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

- Check power adapter and battery.
- Minimize the configuration, i.e. remove extra peripherals and devices.
- Uninstall the software suspected.
- Load Optimized Defaults setting in the BIOS.
- Re-install operating system and application software.