Winmate Communication Inc.

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Military Grade Rugged Console Display User Manual

Version: 1.0

2013

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Warranty

We warrant that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, We will, at its option, repair or replace the defective product at no charge to the customer, provided it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service.

If the serial number and the product shipping data differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W07Axxxxxxxx means October of year 2007.

Packing List

Before using this product, please make sure that all the items listed below are present in your package：

- Display Unit x 1
- User's Manual x 1
- Military Grade Power Cable / 2.0m x 1
- DVI Cable / 2.0m x 1
- VGA Cable / 2.0m x 1
- VGA to BNCs Cable / 2.0m x 1
- Touch RS232 Cable / 2.0m (Optional) x 1
- Touch Driver CD (Optional) x 1

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

Customer Service

We provide service guide for any problem as follow steps：First, visit the website at to find the update information about the product. Second, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance. You may have the following information ready before you call：

- Product serial number
- Peripheral attachments
- Software (OS, version, application software, etc.)
- Description of complete problem
- The exact wording of any error messages

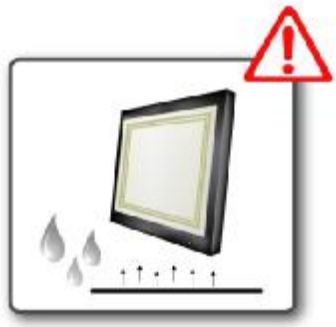
In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products. Please do not hesitate to call or e-mail us.

Safety and Warranty

1. Please read these instructions carefully before using the product and save for later reference.
2. Follow all warnings and instructions marked on the product.
3. Unplug this product from the wall outlet before cleaning. Clean the product with a damp soft cloth. Do not use liquid or aerosol cleaners as it may cause permanent damage to the screen.
4. Do not use this product near water.
5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
6. Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered.
   The openings should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.
7. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
8. This product is equipped with a 3-wire grounding type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet.
   Do not defeat the purpose of the grounding-type plug.
9. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
10. If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord does not exceed the extension cord ampere rating. Also make sure that the total of all products plugged into the wall outlet does not exceed 15 amps.
11. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
12. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks and will void the warranty. Refer all servicing to qualified service personnel.
13. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    - When the power cord or plug is damaged or frayed.
    - If liquid has been spilled into the product.
    - If the product has been exposed to rain or water.
    - If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage

and will often require extensive work by a qualified technician to restore the product to normal operation.

- If the product has been dropped or the cabinet has been damaged.
- If the product exhibits a distinct change in performance, indicating a need for service.

CAUTION		
Read manual prior to installing the product. The operation of products depends on you reading and following the information in this manual. Re-check your work prior to operating the product.		
EVENT	**EFFECT**	**PREVENTION**
	Sunlight shines directly will cause the panel damage.	You should avoid placing the product under direct sunlight.
	If the product is close to the wet ground such as grassplot, the moisture between panel and glass will make the product malfunction.	You should avoid placing the product in wet environment.

Revision History

Version	Date	Note
V1.0	2013.03.08	ü Initial Draft

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1. General Introduction

Military Grade Rugged Console Display Series

Winmate's Military Grade Rugged Console Display provides the anti-corrosion housing, fanless design and military grade power connector. In addition, the rugged design display enhances the front cover with ITO coating glass or touch screen for less interference of electromagnetic, and it also supports 5-wire resistive touch for easy control. The Military Grade Console Rugged Display which covers the sizes from 17-inch to 20.1-inch is the better choice for use in various harsh environment applications, including logistics, heavy vehicle, and Military management.

Specification (17" R17L540-MLA1)

Display

- Size: 17-inch
- Pixels: 1280 x 1024
- Brightness: 350 (cd/m^2)
- Contrast Ratio: 1000:1
- Viewing Angle: -85~85(H); -80~80(V) degree

I/O (Standard)

- 1 x VGA
- 1 x DVI
- 1 x Video BNCs (R, G, B, H, V)
- 1 x RS232 or USB for Touch
- 1 x Power Input

Standards / Certifications

- Safety: Compliant with MIL-STD-810F/G
- EMC: Compliant with MIL-STD-416E/F

Physical Characteristics

- Housing: Aluminum sheet metal
- Dimensions: 482.6 x 399.3 x 75.1 mm (9U)
- Mounting: Flush rack mounting

Glass / Touch

- Glass:
  - Anti-Reflective Glass (Default)
  - ITO Shielding Glass (Optional)
- Touch: (Optional)
  - 5-Wire Resistive Touch
  - 5-Wire Resistive Touch with Mesh Filter

Power Requirements

- Input Voltage:
  - 100 to 240 VAC, 47 to 63 Hz (Default)
  - 24 VDC, 4.16 A (Optional)

Specification (19” R19L340-MLA2)

Display

Size: 19-inch

Pixels: 1280 x 1024

Brightness: 350 (cd/m^2)

Contrast Ratio: 1000:1

Viewing Angle: -85~85(H); -80~80(V) degree

I/O (Standard)

1 x VGA

1 x DVI

1 x Video BNCs (R, G, B, H, V)

1 x RS232 or USB for Touch

1 x Power Input

Standards / Certifications

Safety: Compliant with MIL-STD-810F/G

EMC: Compliant with MIL-STD-416E/F

Physical Characteristics

Housing: Aluminum sheet metal

Dimensions: 482.6 x 399.3 x 76.9 mm (9U)

Mounting: Flush rack mounting

Glass / Touch

Glass:

- Anti-Reflective Glass (Default)
- ITO Shielding Glass (Optional)

Touch: (Optional)

- 5-Wire Resistive Touch
- 5-Wire Resistive Touch with Mesh Filter

Power Requirements

Input Voltage:

- 100 to 240 VAC, 47 to 63 Hz (Default)
- 24 VDC, 4.16 A (Optional)

Specification (20.1” R20L100-RKA2ML)

Display

Size: 20.1-inch

Pixels: 1600 x 1200

Brightness: 300 (cd/m^2)

Contrast Ratio: 800:1

Viewing Angle: -89~89(H); -89~89(V) degree

I/O (Standard)

1 x VGA

1 x DVI

1 x Video BNCs (R, G, B, H, V)

1 x RS232 or USB for Touch

1 x Power Input

Standards / Certifications

Safety: Compliant with MIL-STD-810F/G

EMC: Compliant with MIL-STD-416E/F

Physical Characteristics

Housing: Aluminum sheet metal

Dimensions: 482.6 x 399.3 x 85 mm (9U)

Mounting: Flush rack mounting

Glass / Touch

Glass:

- Anti-Reflective Glass (Default)
- ITO Shielding Glass (Optional)

Touch: (Optional)

- 5-Wire Resistive Touch
- 5-Wire Resistive Touch with Mesh Filter

Power Requirements

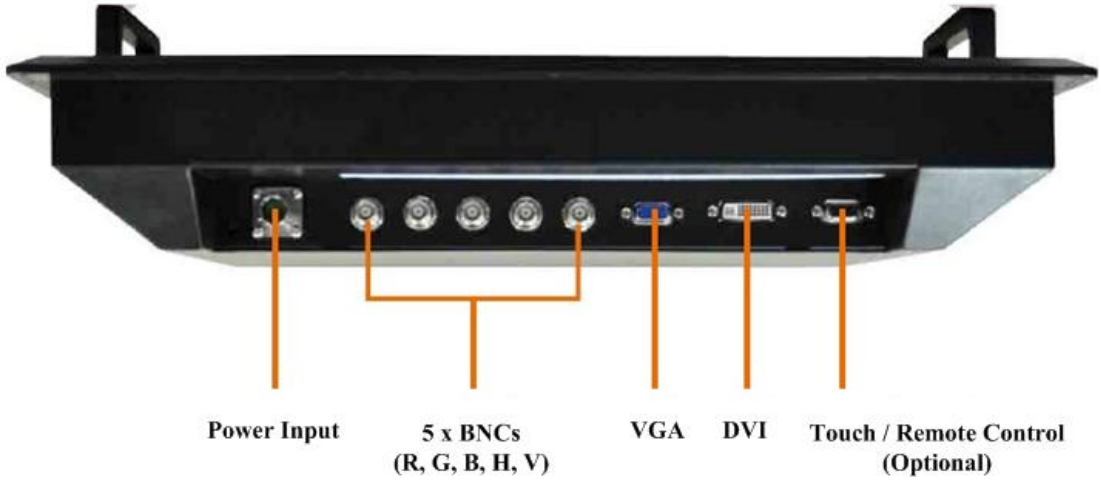
Input Voltage:

- 100 to 240 VAC, 47 to 63 Hz (Default)
- 24 VDC, 4.16 A (Optional)

Packing Lists

- Display Unit x 1
- User's Manual x 1
- Military Grade Power Cable / 2.0m x 1
- DVI Cable / 2.0m x 1
- VGA Cable / 2.0m x 1
- VGA to BNCs Cable / 2.0m x 1
- Touch RS232 Cable / 2.0m (Optional) x 1
- Touch Driver CD (Optional) x 1

I/O View



Installation

Following the procedures below to set up the display.

Power

Switch off the power on both your display and your computer.

The Power Switch is located in the front side of the display.

Power Cable Connection

Connect one end of Military Grade power connector to the display, and the other end of connector to the power source.

100 to 240 VAC, 47 to 63 Hz (Default)

24 VDC (Optional)

Shielding VGA Signal Cable Connection

Plug one end of the 15-pin D-Sub signal cable to the video signal connector at the rear of the PC system and the other end to the display.

Secure the connectors with the screws on the cable connector at both ends.

Shielding DVI Signal Cable Connection

Plug one end of the DVI signal cable to the video signal connector at the rear of the PC system and the other end to the Display.

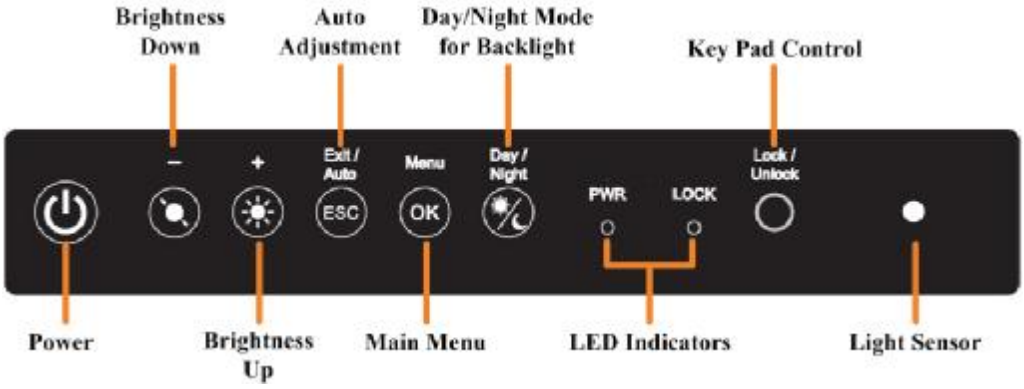
Shielding VGA to BNCs Signal Cable Connection

Plug one end of D-Sub VGA signal cable to the rear side of the PC system and the other end of BNCs (R,G,B,H,V) signal connector to the display.

2. On-Screen Display Configuration

On-Screen Display (OSD) is a user-friendly interface to remote the display function and to adjust the display's image properties. It also supports special Hot Keys for easy control, such as auto-adjustment and brightness control for backlight.

Definition of Control Key



LED Indicators

The following table describes the LED Indicators located on the front of the display.

Name	Color	Function
PWR	Green	Power is on and functioning normally
	Orange	Display is suspended
LOCK	Red	The functions of OSD buttons are locked
	Off	Lock function is disabled

Buttons

Power: Turn on or turn off the display

Brightness Down: Decrease the brightness of the panel, or allow users to navigate the items of a single OSD menu

Brightness Up: Increase the brightness of the panel, or allow users to navigate the items of a single OSD menu

Auto-adjustment: Auto-adjust the display image to correct for off-centered images, improper aspect ratio, phase or frequency. (VGA channel only)

Main Menu: Open the OSD configuration, or allow users to navigate to sub-menu from a specific menu item

Day/Night Mode: Convenient and fast control for the brightness of the panel which is suitable used in specific environments.

Key Pad Control: Lock or unlock the functions of OSD buttons

Navigating OSD Menu

1. Open the OSD configuration

Press the **Main Menu** button to show the OSD menu on the display.

2. Select the specific menu you want

Press the **"+/—"** buttons to navigate the items of a single OSD menu, and press the **"OK"** button to enter to sub-menu from a specific menu item.

3. Modify the value of setting

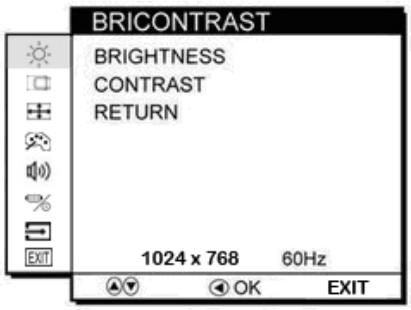
Press the **"+/—"** buttons to modify the value of settings, and the value will be stored automatically.

4. Exit the OSD configuration

Press the **Exit** button to return to the regular screen viewing, and the OSD menu will be closed automatically if there is no command respond for 30 seconds.

OSD Menu on VGA Mode

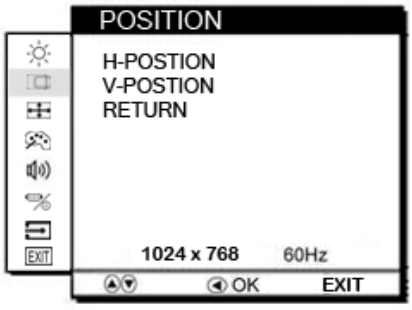
BRICONTRAST



- **BRIGHTNESS**
  Electronically increase or decrease the overall brightness of the panel, and it applies to the main source signal.

- **CONTRAST**
  Increase or decrease the overall contrast of the panel electronically, and it applies to the main source signal.

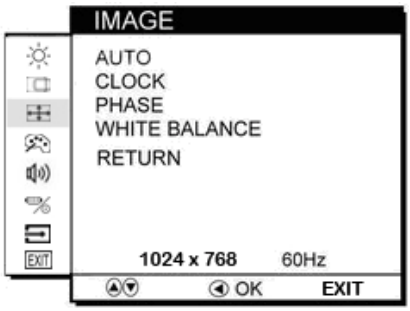
POSITION



- **H-POSITION**
  Adjust the horizontal (left/right) position of the real-time window overlay.

- **V-POSITION**
  Adjust the horizontal (left/right) position of the real-time window overlay.

IMAGE



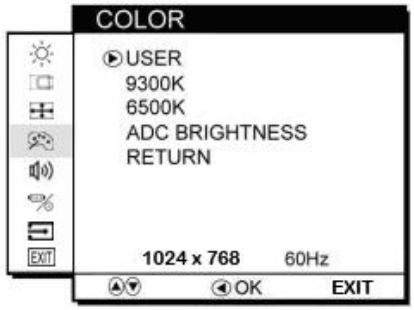
- **AUTO**
  Make the best settings for the current input signal.

- **CLOCK**
  Adjust the value of horizontal image.

- **PHASE**
  Remove pixellation defects in black areas

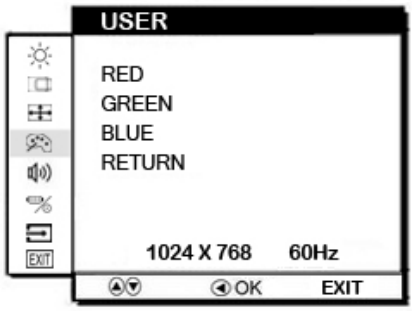
that manifest as a vertical line from top to bottom by fine tuning signal data sampling.

- **WHITE BALANCE**
  Recalibrate the gain on the R(red), G(green), and B(blue) signals (color intensity) to a neutral, normalized level automatically.



COLOR

- **USER**
  The user can adjust the R(red), G(green), and B(blue) levels of color temperature manually.



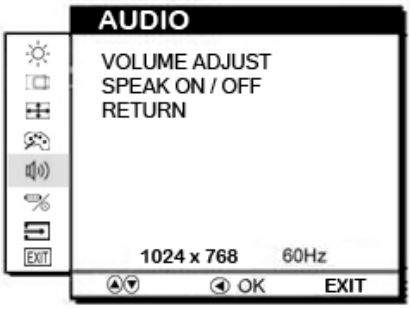
- **9300K**
  Set value of display for the CIE coordinate 9300 color temperature.

- **6500K**
  Set value of display for the CIE coordinate 6500 color temperature.

- **ADC BRIGHTNESS**
  Set value of display for ADC brightness.

AUDIO (Optional)

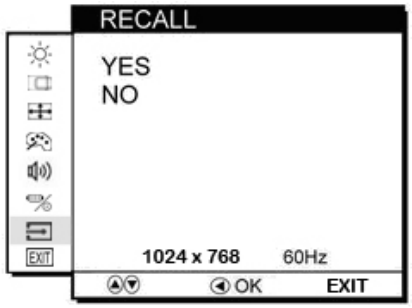
- **VOLUME ADJUST**
  Adjust the volume of speaker.



- **SPEAK ON / OFF**
  Turn on or turn off the speaker.

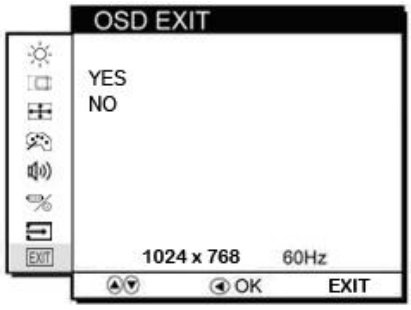
RECALL

The user can recall the factory default setting by selecting "**YES**", or return to the main menu by selecting "**NO**".



OSD EXIT

The user can exit the OSD menu by selecting "**YES**", or return to the main menu by selecting "**NO**".

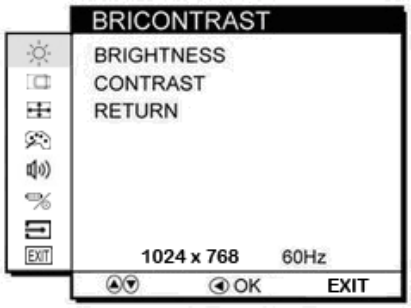


OSD Menu on DVI Mode

BRICONTRAST

- **BRIGHTNESS**
  Electronically increase or decrease the overall brightness of the panel, and it applies to the main source signal.

- **CONTRAST**
  Increase or decrease the overall contrast of the panel electronically, and it applies to the main source signal.



POSITION

It is not available on DVI Mode.

IMAGE

It is not available on DVI Mode.

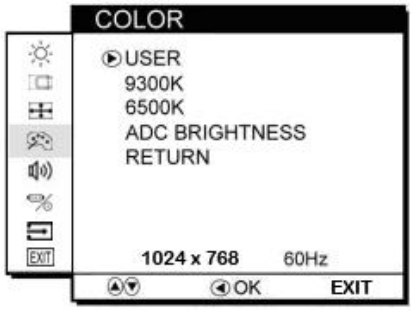
COLOR

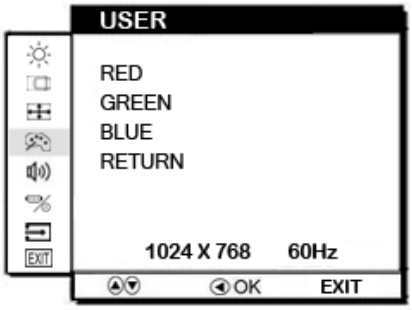
- **USER**
  The user can adjust the R(red), G(green), and B(blue) levels of color temperature manually.

- **9300K**
  It is not available on DVI Mode.

- **6500K**
  It is not available on DVI Mode.

- **ADC BRIGHTNESS**
  It is not available on DVI Mode.

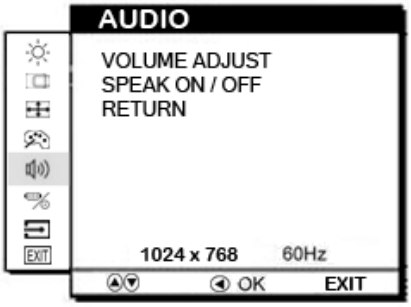




AUDIO (Optional)

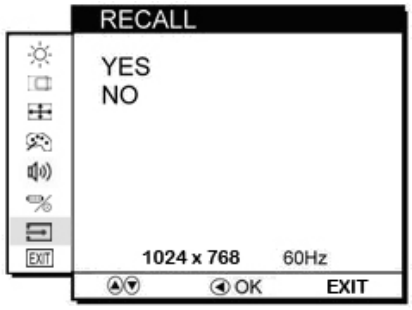
- **VOLUME ADJUST**
  Adjust the volume of speaker.

- **SPEAK ON / OFF**
  Turn on or turn off the speaker.



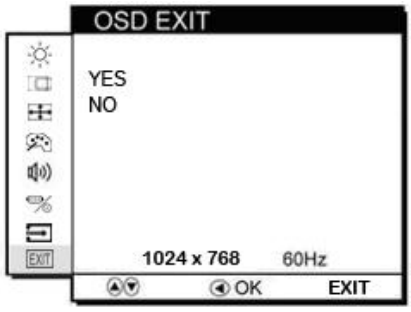
RECALL

The user can recall the factory default setting by selecting "**YES**", or return to the main menu by selecting "**NO**".



OSD EXIT

The user can exit the OSD menu by selecting "**YES**", or return to the main menu by selecting "**NO**".



A

Trouble Shooting

Condition	Check Point
1. The picture does not appear	Check if the signal cable is firmly seated in the socket. Check if the Power is ON at the computer Check if the brightness control is at the appropriate position, not at the minimum.
2. The screen is not synchronized	Check if the signal cable is firmly seated in the socket. Check if the output level matches the input level of your computer. Make sure the signal timings of the computer system are within the specification of the monitor. If your computer was working with a CRT monitor, you should check the current signal timing and turn off your computer before you connect the VGA Cable to this monitor.
3. The position of the screen is not in the center	Adjust the H-position, and V-position, or Perform the Auto adjustment.
4. The screen is too bright (too dark)	Check if the brightness or contrast control is at the appropriate position, not at the Maximum (Minimum).
5. The screen is shaking or waving	Press (the Auto - adjustment control) to adjust. Moving all objects which emit a magnetic field such as motor or transformer, away from the monitor. Check if the specific voltage is applied. Check if the signal timing of the computer system is within the specification of monitor.

Ø If you are unable to correct the fault by using this chart, stop using your monitor and contact your distributor or dealer for further assistance.

B

MIL-STD-810F/G Compliance

MIL-STD-810F/G Compliance			
Test		**Reference**	**Condition**
*** High Temperature**	**Storage**	Method 501, Procedure I	Basic Hot 30 to 63℃ ± 2℃
	Operation	Method 501, Procedure II	Basic Hot 30 to 63℃ ± 2℃
*** Low Temperature**	**Storage**	Method 502, Procedure I	-21℃ ± 2℃ (MIL-STD-810F) -33℃ ± 2℃ (MIL-STD-810G)
	Operation	Method 502, Procedure II	-21℃ ± 2℃ (MIL-STD-810F) -33℃ ± 2℃ (MIL-STD-810G)
*** Humidity**		Method 507	20 to 60℃ ± 2℃, 95%RH ± 3%
*** Vibration**		Method 514, Procedure I	5 ~ 500 Hz, 1.62/2.05/2.20 Grms, 3-Axis (MIL-STD-810F) 5 ~ 500 Hz, 1.48/1.90/2.24 Grms, 3-Axis (MIL-STD-810G)
*** Transit Drop**		Method 516, Procedure IV	4ft, 8 Corner, 12 edges, 6 faces
Low Pressure (Altitude)	**Storage**	Method 500, Procedure I	30℃ ± 2℃, 15,000 ft (4,572 m)
	Operation	Method 500, Procedure II	30℃ ± 2℃, 15,000 ft (4,572 m)
Thermal Shock		Method 503, Procedure II	-21 to 63℃ ± 2℃ (MIL-STD-810F) -33 to 63℃ ± 2℃ (MIL-STD-810G)
Salt Fog		Method 509	Salt Spray test, exposing for 24 Hrs Drying condition for 24 Hrs 24 Hrs Salt Spray exposure + 24 Hrs Drying condition
Shock		Method 516, Procedure I	Impact acceleration 40 G, 6 faces

* Default Tests

C

MIL-STD-461E/F Compliance

MIL-STD-461E/F Compliance			
Test	**Description**	**Type**	**Frequency Range**
CE101	Power Leads	Conducted Emission	30 Hz ~ 10 kHz
*** CE102**	Power Leads	Conducted Emission	10 kHz ~ 10 MHz
CS101	Power Leads	Conducted Susceptibility	30 Hz ~ 150 kHz
CS109	Structure Current	Conducted Susceptibility	60 Hz ~ 100 kHz
CS114	Bulk Cable Injection	Conducted Susceptibility	10 kHz ~ 200 MHz
CS116	Damped Sinusoidal Transients, Cables and Power Leads	Conducted Susceptibility	10 kHz ~ 100 MHz
RE101	Magnetic Field	Radiated Emission	30 Hz ~ 100 kHz
*** RE102**	Electric Field	Radiated Emission	10 kHz ~ 18 GHz
RS101	Magnetic Field	Radiated Susceptibility	30 Hz ~ 100 kHz
RS103	Electric Field	Radiated Susceptibility	2 MHz ~ 18 GHz

* Default Tests