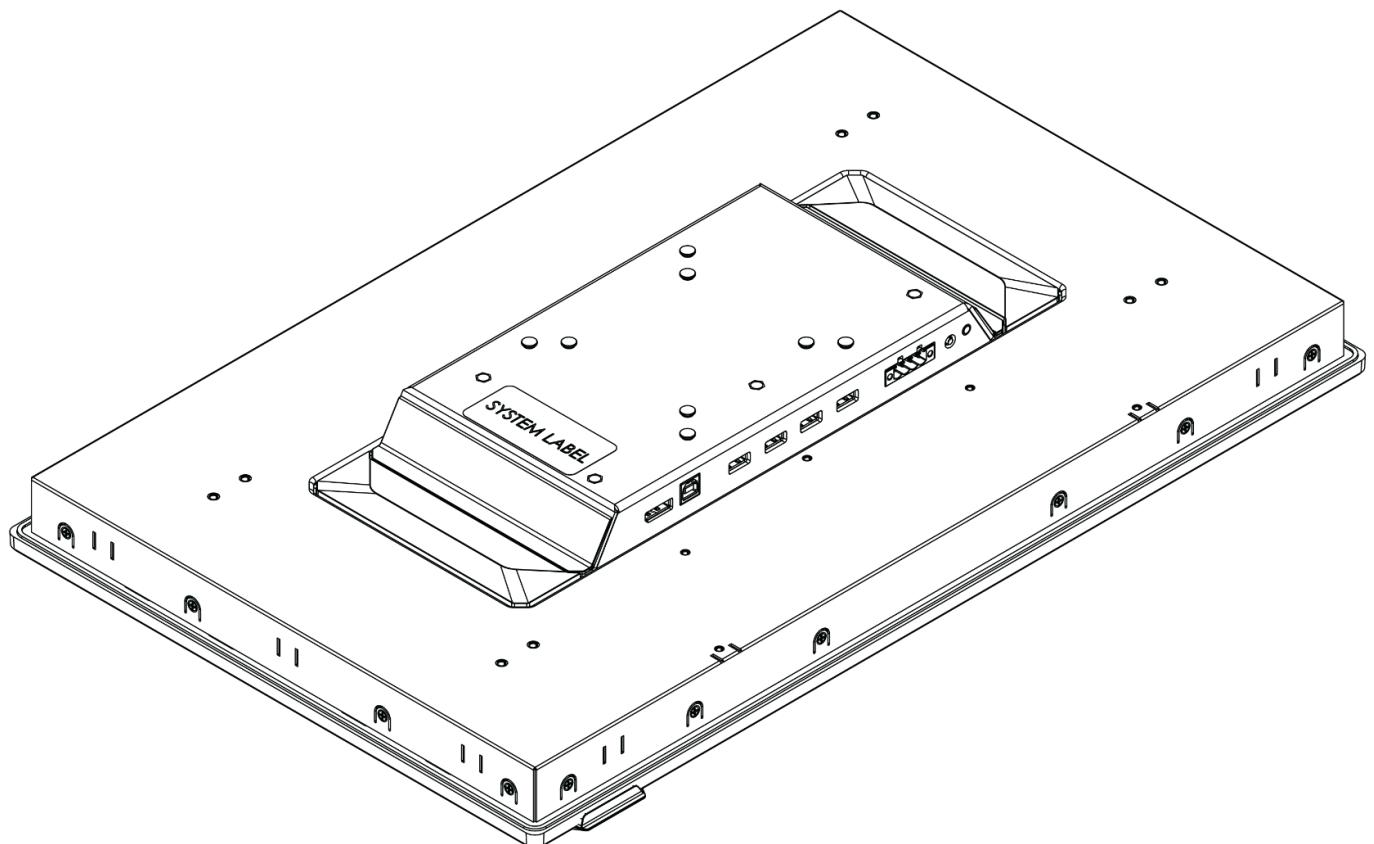




Tacton TN101 Industrial Touch Screen Product Manual



Revision History

Revision History	Date
First Release of Tacton TN101 Manual	03/28/2024

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Safety Precautions, Safeguards & Information

Do not open and modify the device! The device complies with various national and international Safety, EMC and Environmental requirements per various standards.

Modification of the device may void certifications, warranty and/or cause possible injury to the user.

Safe use and installation instructions

1. Care must be taken handling the device to prevent injury to self or possibility of damaging the unit.
2. Read the entire manual before using the product.
3. Install the device securely per users manual instructions.
4. Panel mounting requires use of OnLogic mounting kit.
5. VESA mounting device should use 4x M4x0.7mm L=10mm screws to VESA arm or mount to threaded holes on rear of chassis. Screws should be a minimum length of 6mm. Add 1mm of screw length for every mm of additional thickness of plate or bracket beyond 1.5mm.
-  6. **Caution, Hot Surface!** It is normal for the unit to heat up and be hot to touch. **Do not touch** the heatsink area or back enclosure during operation and up to 30 minutes after shutdown allowing the unit to cool down.
7. Ambient operating temperature must be between -20 to 70°C or 0 to 60°C with a non-condensing relative humidity of 0-90%. [Please refer to the Panel temperature range.](#)
8. The device can be stored at temperatures between -10 °C to 85 °C. Note: Unit must be stabilized within operating temperature before use, minimum 3HR.
9. Keep the device away from liquids and flammable materials. Not to be installed in a hazardous environment. Please read installation instructions and limitations carefully for IP66/69K applications.
10. Do not clean the rear of the device with liquids. Screen area only may be cleaned with approved chemicals. Please refer to Appendix 6.9 - Approved Cleaning Agents. The rear chassis can be cleaned with a dry cloth or duster only. To prevent injury to self and/or damage to the device the unit must be powered down and all connecting power and other peripherals shall be disconnected prior to cleaning.
11. Allow adequate space around all sides of the device for proper cooling and to not exceed its maximum operating temperature limit. If the device is mounted to a vertical surface then recommended device orientation is such that heatsink fins allow air to rise unobstructed.
12. When not panel mounted, this device is intended for indoor operation only.
-  13. **Caution, Risk of Electric Shock!** The unit is powered by low voltage DC (Direct Current) only! Do not connect AC (Alternating Current) into the device!
14. To power the device use only UL ITE Listed external power supplies with DC output of 12-24VDC or 12-48VDC, see specs for details.
15. Install the device only with shielded network cables.
16. The installer should be experienced in aftermarket installation and familiar with general practices for installing electronics.
17. Service and repair of the device must be done by qualified skilled service personnel. This

includes, but is not limited to, replacement of the CMOS battery. Replacement CMOS battery must be UL recognized and with minimum requirements as the original.

18. Proper disposal of the CMOS battery must comply with local governance.
19. Radio device is not intended for emergency service use.
20. To protect against excessive RF exposure, maintain at least 20cm from any user and the RF antennas. Only use provided dual band PIFA antennas with 2dBi/2dBi gain (2.4 and 5Ghz) for Wifi/BT.
21. This equipment is not suitable for use in locations where children are likely to be present.



WARNING: There is danger of explosion if the CMOS battery is replaced incorrectly. Disposal of battery into fire or a hot oven, or mechanically crushing or cutting of a battery can result in an explosion.

Précautions de sécurité, sauvegardes et informations

Ne pas ouvrir et modifier l'appareil ! L'appareil est conforme à diverses exigences nationales et internationales en matière de sécurité, de CEM et d'environnement selon diverses normes.

La modification de l'appareil peut annuler les certifications, la garantie et/ou causer des blessures à l'utilisateur.

Instructions d'utilisation et d'installation en toute sécurité

1. Des précautions doivent être prises lors de la manipulation de l'appareil pour éviter de se blesser ou d'endommager l'appareil.
2. Lisez l'intégralité du manuel avant d'utiliser le produit.
3. Installez l'appareil en toute sécurité selon les instructions du manuel de l'utilisateur..
4. Le dispositif de montage au mur ou au plafond nécessite l'utilisation d'une plaque de montage ou d'un support OnLogic.
5. Le dispositif de montage VESA doit utiliser 4 vis M4x0,7 mm L = 10 mm sur le bras VESA ou être monté sur des trous filetés à l'arrière du châssis. Les vis doivent avoir une longueur minimale de 6 mm. Ajoutez 1 mm de longueur de vis pour chaque mm d'épaisseur supplémentaire de plaque ou de support au-delà de 1,5 mm.
6. **Attention, surface chaude!** Il est normal pour les unités de se réchauffer et de devenir chaude au toucher. Évitez de toucher les surfaces de dissipation de chaleur ou le boîtier pendant l'utilisation ou jusqu'à 30 minutes après l'arrêt pour permettre à l'unité de se refroidir.

7. La température ambiante de fonctionnement doit être comprise entre -20 et 70 °C ou entre 0 et 60 °C avec une humidité relative sans condensation de 0 à 90 %. Veuillez vous référer à la plage de température du panneau.
8. L'appareil peut être stocké à des températures comprises entre -10 °C et 85 °C. Remarque : L'unité doit être stabilisée à la température de fonctionnement avant utilisation, minimum 3 heures.
9. Gardez l'appareil à l'écart des liquides et des matériaux inflammables. Ne pas installer dans un environnement dangereux. Veuillez lire attentivement les instructions d'installation et les limitations pour les applications IP66/69K.
10. Ne nettoyez pas l'arrière de l'appareil avec des liquides. Seule la zone de l'écran peut être nettoyée avec des produits chimiques approuvés. Veuillez vous référer à l'Annexe 6.9 - Agents de nettoyage approuvés. Le châssis arrière peut être nettoyé uniquement avec un chiffon sec ou un plumeau. Pour éviter de vous blesser et/ou d'endommager l'appareil, l'appareil doit être mis hors tension et toute l'alimentation de connexion et les autres périphériques doivent être déconnectés avant le nettoyage.
11. Prévoyez un espace suffisant autour de tous les côtés de l'appareil pour un refroidissement correct et pour ne pas dépasser sa limite de température de fonctionnement maximale. Si l'appareil est installé sur une surface verticale, l'orientation recommandée de l'appareil est telle que les ailettes du dissipateur thermique permettent à l'air de monter sans obstruction. Des orientations alternatives peuvent entraîner une plage de températures de fonctionnement réduite.

- 
12. Lorsqu'il n'est pas monté sur panneau, cet appareil est destiné à un fonctionnement en intérieur uniquement.
 13. **Avertissement! Risque de choc électrique !** L'unité est alimentée uniquement par une basse tension CC (courant continu) ! Ne connectez pas le courant alternatif (courant alternatif) à l'appareil !
 14. Pour alimenter l'appareil, utilisez uniquement des alimentations externes homologuées UL ITE avec une sortie CC de 12-24 VCC ou 12-48 VCC, voir les spécifications pour plus de détails.
 15. Installez l'appareil uniquement avec des câbles réseau blindés.
 16. L'installateur doit avoir de l'expérience dans l'installation du marché secondaire et être familiarisé avec les pratiques générales d'installation de l'électronique.
 17. L'entretien et la réparation de l'appareil doivent être effectués par un personnel d'entretien qualifié et qualifié. Cela inclut, mais sans s'y limiter, le remplacement de la batterie CMOS. La batterie CMOS de remplacement doit être reconnue UL et d'un type similaire à l'original.
 18. L'élimination appropriée de la batterie CMOS doit être conforme à la gouvernance locale
 19. L'appareil radio n'est pas destiné aux services d'urgence..
 20. Pour vous protéger contre une exposition RF excessive, maintenez au moins 20 cm de tout utilisateur et des antennes RF. Utilisez uniquement les antennes PIFA double bande fournies avec un gain de 2 dBi/2 dBi (2,4 et 5 Ghz) pour le Wifi/BT.
 21. Cet équipement n'est pas adapté à une utilisation dans des endroits où des enfants sont susceptibles d'être présents.



AVERTISSEMENT : Il existe un risque d'explosion si la pile CMOS n'est pas remplacée correctement. L'élimination de la batterie dans le feu ou dans un four chaud, ou l'écrasement ou le découpage mécanique d'une batterie peut entraîner une explosion.

1 - System Overview

1.1 - System Introduction

The Tacton 101 Industrial Touch Screen (TN101) is a display panel from OnLogic that comes with a proximity sensor and option of camera. Upon power plugged-in, the non compute panel will go to full operation mode(ON). All features of the non compute is operational provided the DP port and USB host port is connected to the compute system. The systems also feature compliance testing for IT Equipment EMC and Safety and pre-compliance testing for IEC 60601-1-2 (4th edition) medical immunity.

1.2 - Accessories

If you purchased additional items such as mounting brackets, power supplies or terminal block connectors, they will be located in the system box or within the outer shipping carton.

All drivers and product guides can be found on the corresponding product page. For more information on accessories and additional features, visit the Tacton Product pages.

TN101 Product Page: <https://www.onlogic.com/tn101/>

Tacton Series Page: <https://www.onlogic.com/computers/panel-pc/tacton>

1.3 - Product Specifications

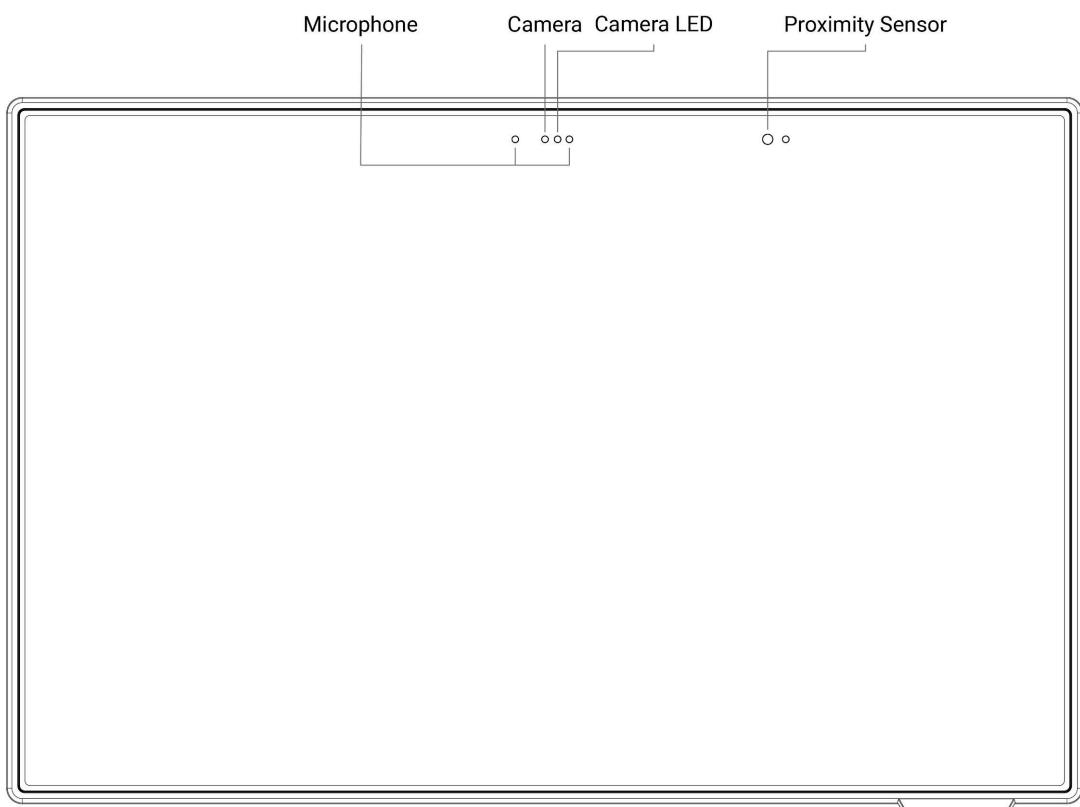
OnLogic TN100 Series	
Panel size	12.1" 1920x800 (WXGA) 16:10 15.6" 1920x1080 (Full HD) 16:9 21.5" 1920x1080 (Full HD) 16:9 Standard Brightness (350-600 nits), High Brightness (1000 nits), Resistive & PCAP (Optically Bonded) touch options Viewing angle 160 H°/ 160 V° (min)
I/O	1x Power Button (LED Backlit) 4x USB2 Type A 1x USB2 Type B 1x Full size DisplayPort 1.4a input port 1x4-pin Terminal Block
Voltage Input	Rated input: 12~24V via Terminal Block, +/- 10% tolerance

Power Protections	TVS for power input protection Moderate disturbance protection with a TVS LC filter. Alternate DC supplies should be IT equipment rated when possible.
Dimensions (Not Including Branding Flag)	12.1": 309.0 mm x 225.4 mm x 57.5mm (W x H x D) 15.6" : 394.8 mm x 259.4 mm x 59.5mm (W x H x D) 21.5" : 528.2 mm x 335.3 mm x 62.5mm (W x H x D)
Mounting Hole Size	12.1": 296.0±1.5 mm x 212.0±1.5 mm (W x H) 15.6" : 381.5±1.5 mm x 246.0±1.5 mm (W x H) 21.5" : 515.0±1.5 mm x 322.0±1.5 mm (W x H)
Weight	System with 12.1" panel: ~3.15 kg / 6.9 lbs System with 15.6" panel: ~4.6 kg / 10.1 lbs System with 21.5" panel: ~ 7.45 kg / 16.4 lbs
Mounting Options	Panel VESA
Thermal Standards, Subject to Change through RFI and RFQ steps	Panel Operating Temperature: -20-70C with selected panel. Please refer to Appendix E Storage Temperature: -30-85C with selected panel. Please refer to Appendix E Operating Humidity: 0% - 90%

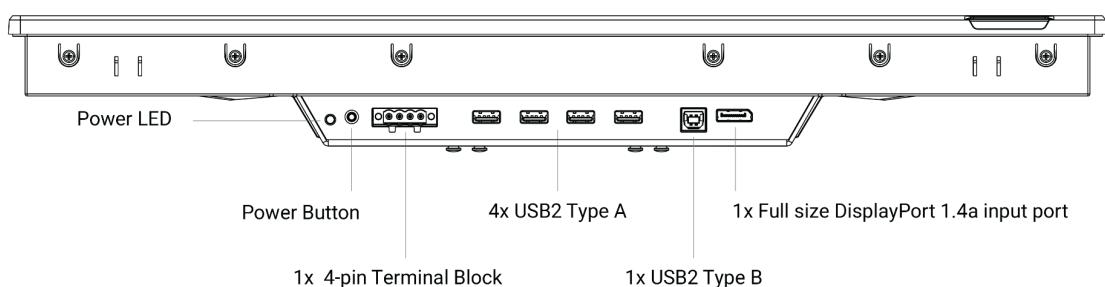
1.4 - Exterior Features and Dimensions

1.4.1 - Panel Front facing

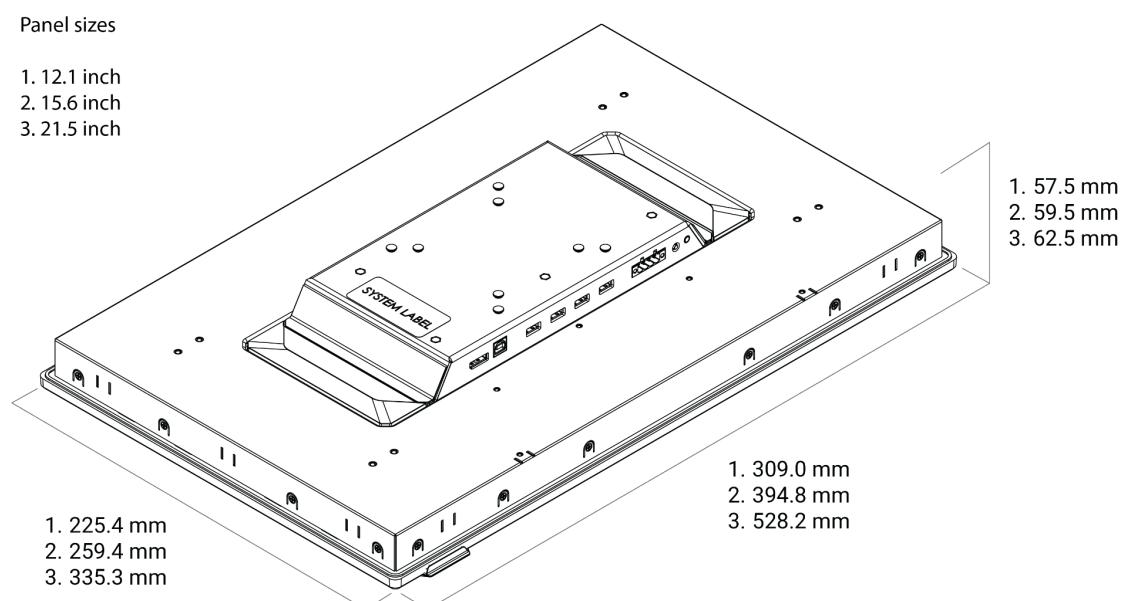
The TC401 Front Panel view



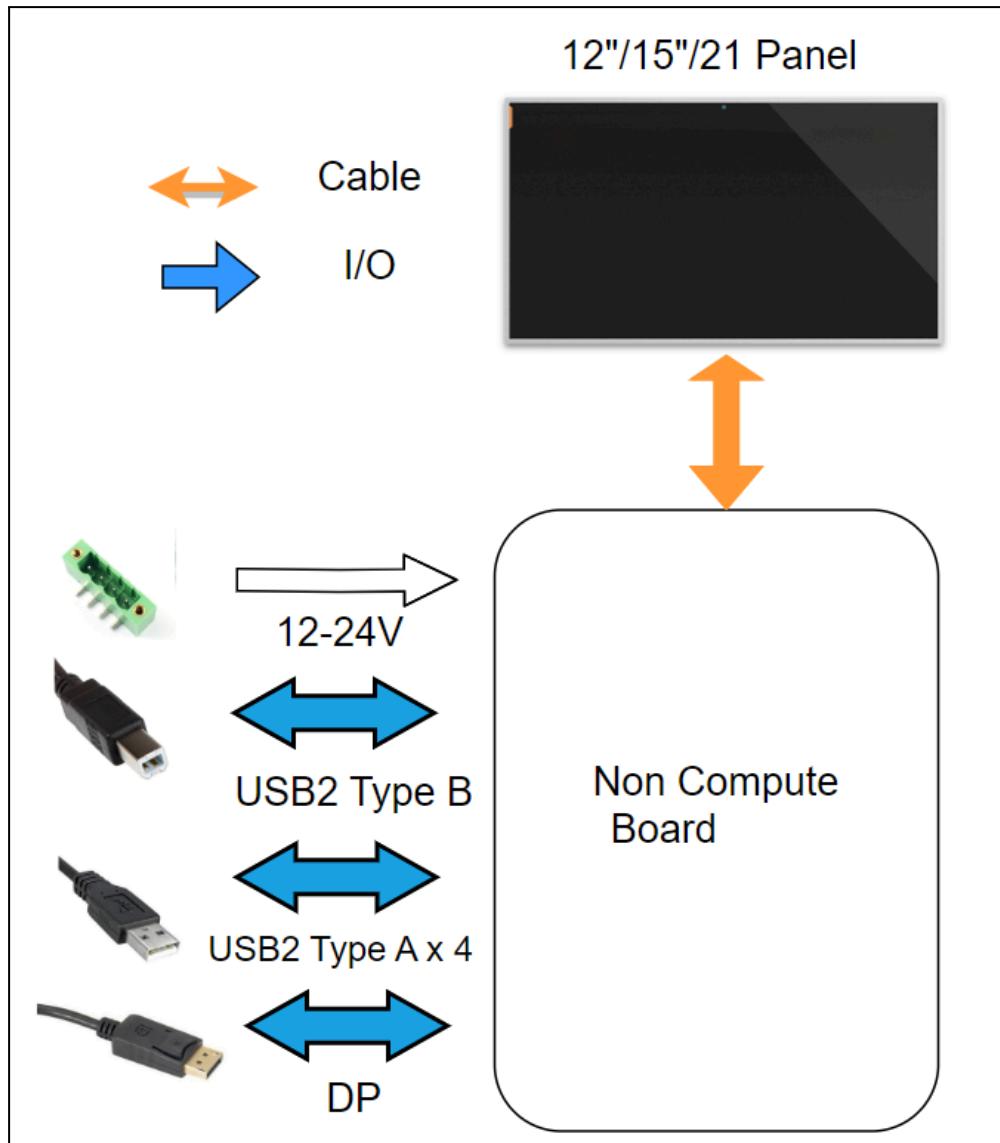
1.4.2 - Panel I/O Back Facing



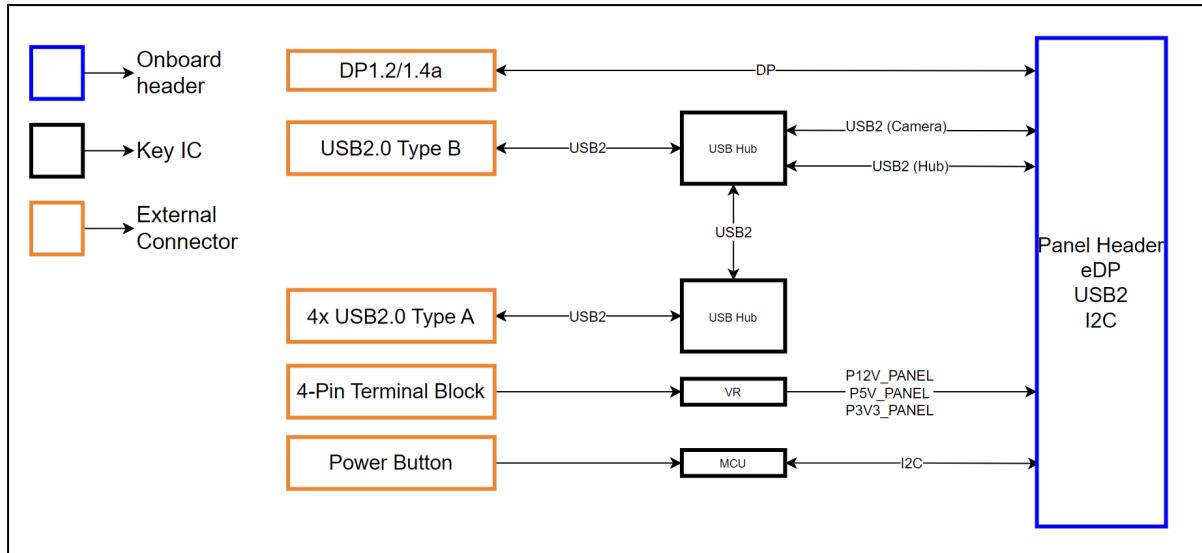
1.4.3 - TN101 Dimensions



1.5 - TN101 System Block Diagram



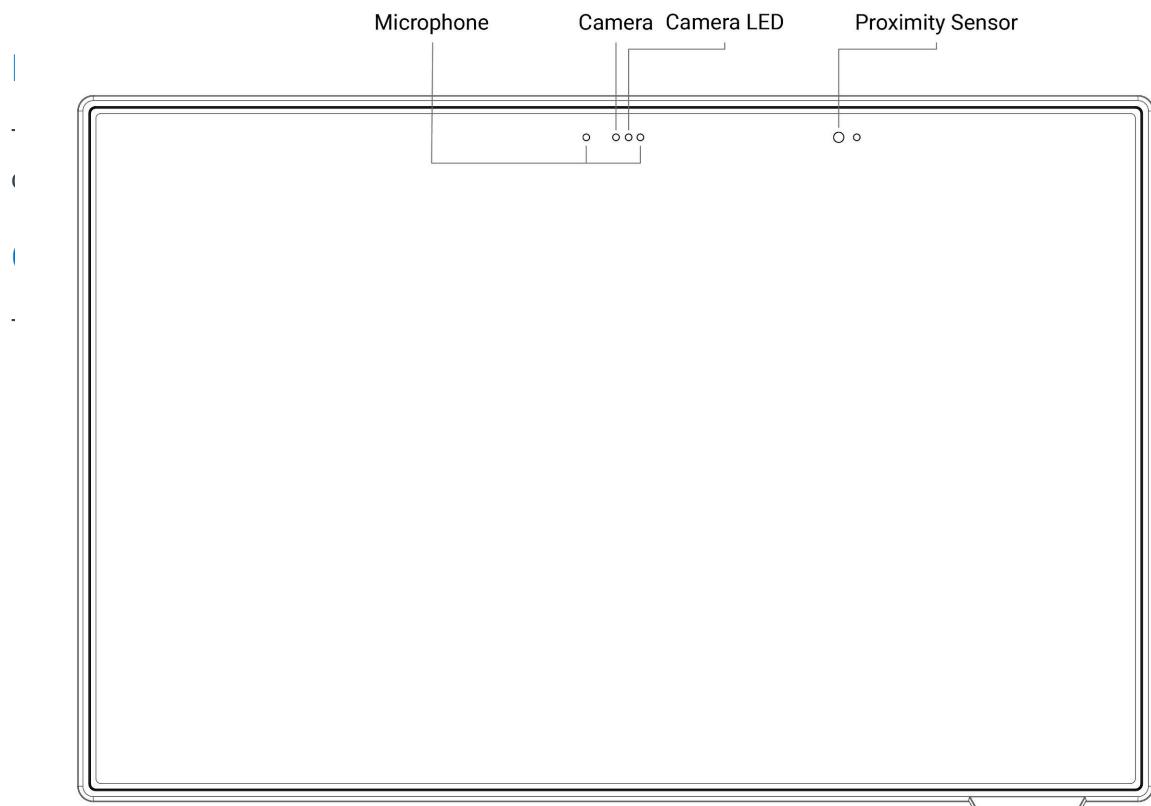
1.6 - System Circuit Block Diagram



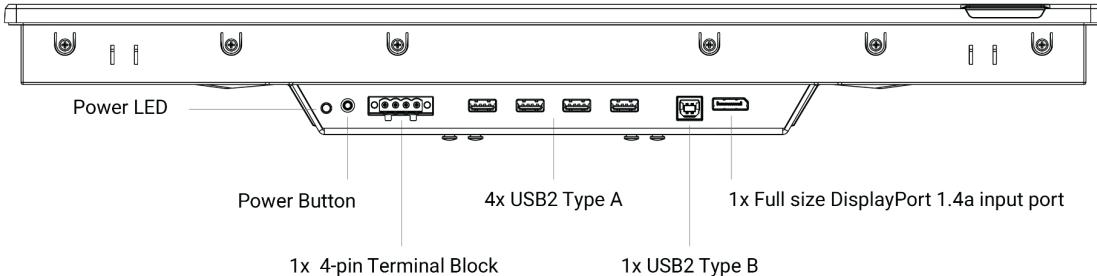
2 - I/O Definitions

2.1 - Front I/O Definition

The TN101 is pictured with the optional camera option.



2.1 - Panel I/O Back facing



Power Button

The power button can be used to turn on and off the TN101 system. The power button is a momentary contact button. A single press while the system is on will initiate the display panel to enter low power mode. The second press will turn OFF the display panel.

Power LED

The LED will indicate the display status. The LED will blink on low power mode or the computer has entered a sleep state, ON when the panel is in operation and OFF when the panel is turned off.

USB 2.0

There are four USB 2.0 Type A ports for TN101. This port is capable of linking at 480 Mb/s transfer rates.

DisplayPort 1.4a

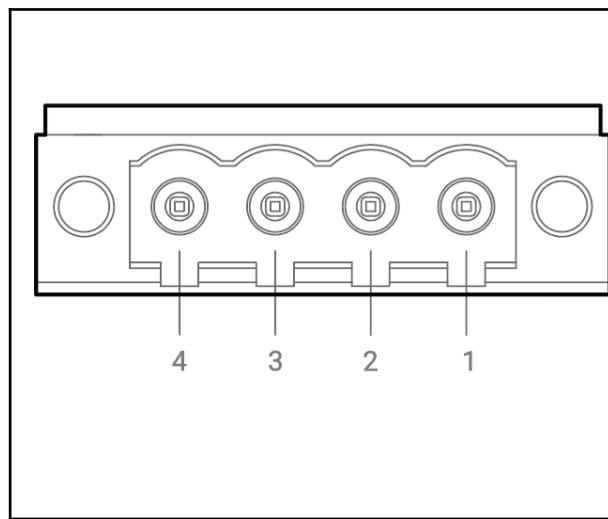
TN101 has a full DP input connector that is capable of internal conversion to LVDS with 1280x800 or 1920x1080 based on the panel size.

Terminal Block Power Input

The TN101 has a 4-pin terminal block connector (Mating part: Dinkle #2ESDVM-04P-BK or equivalent).

The system is operational from 12V~24V (TN101). The maximum rated current of the connector is 15A per pin. Use a wire gauge that is rated for the operational current. Cables should be properly terminated with wire ferrules. Do not use the terminal block with tinned wire ends or solid core wire.

See below for the connector pinout which is also indicated on the terminal block mounting panel adjacent to the connector. Installation of DC Mains connection shall only be performed by skilled personnel and in accordance with your local and national electrical code (Example: NEC, CEC).

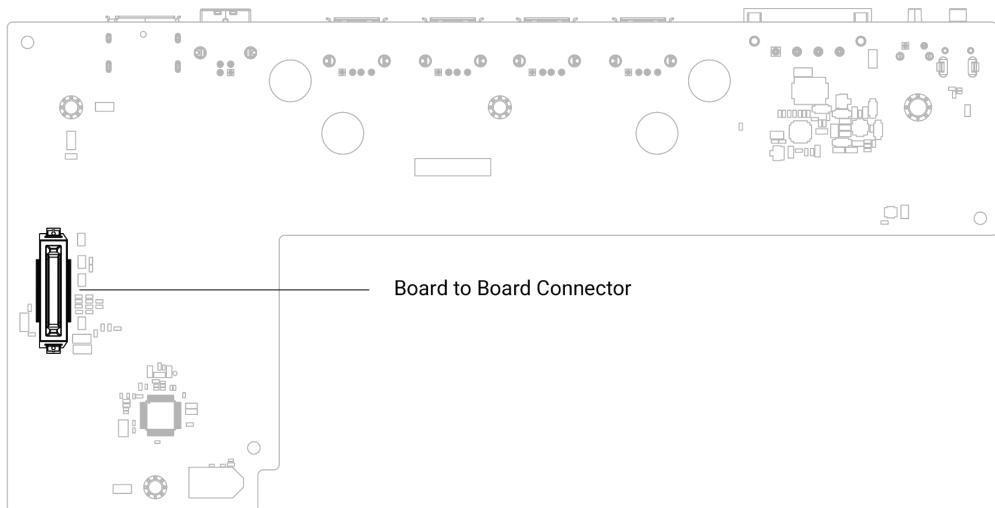


Pin	Function
1	DC +
2	DC -
3	DC-
4	DC+

Terminal block power pinout

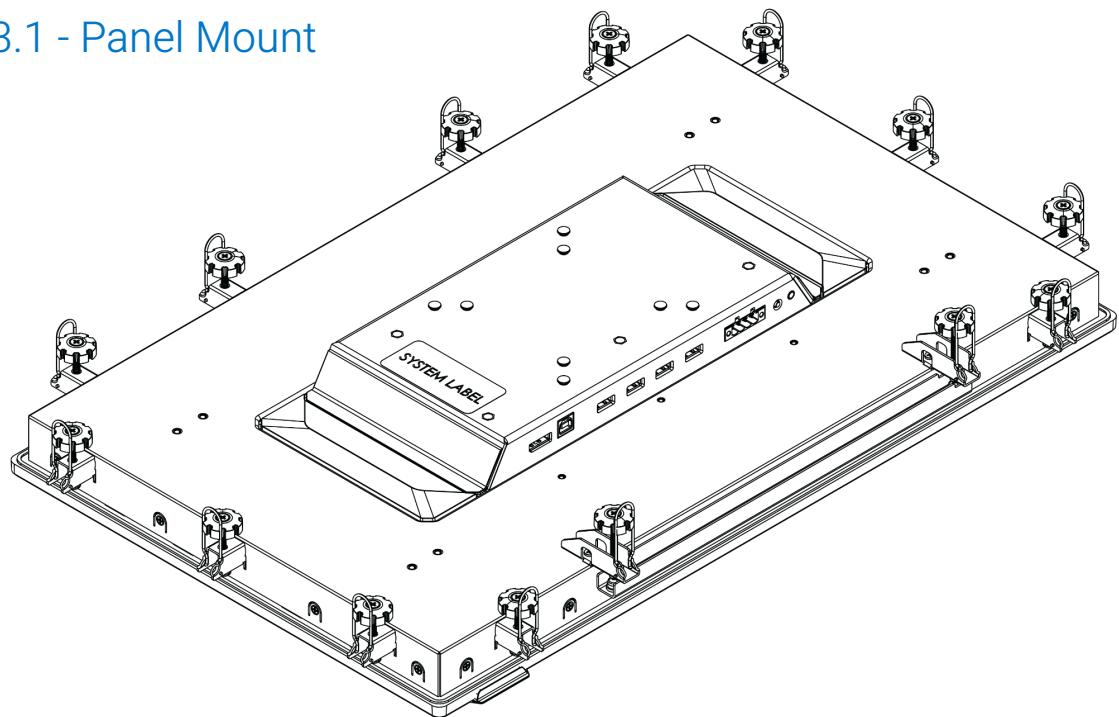
2.2 - Panel board Connector

The panel board top and bottom view for TN101.

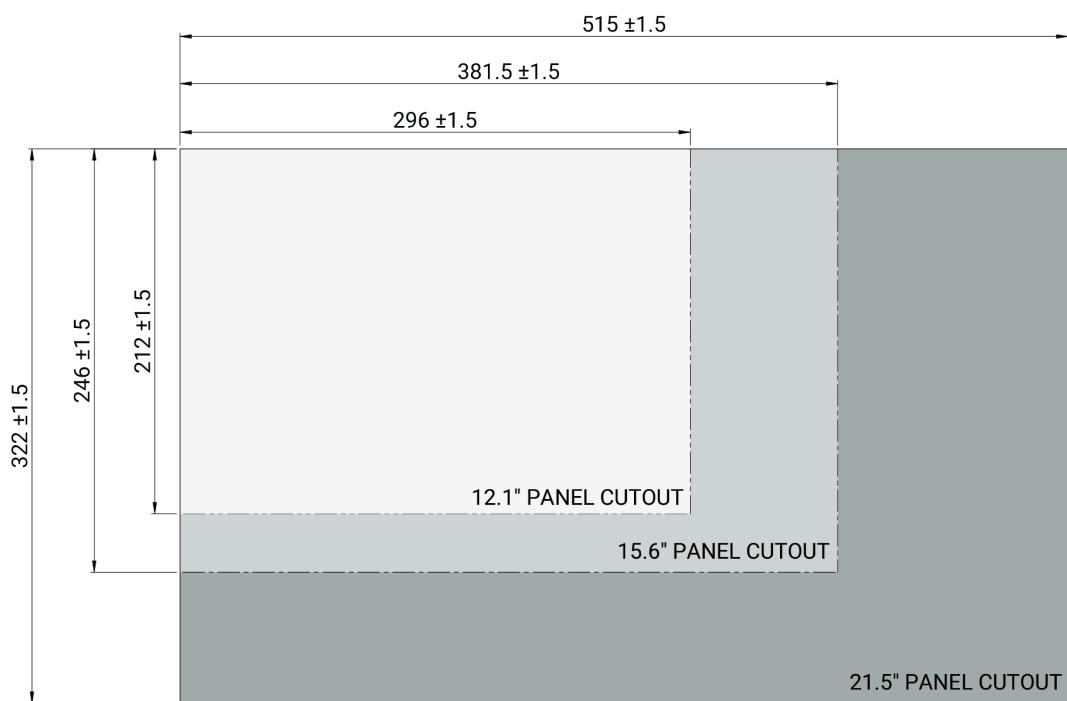


3 - Mounting Instructions

3.1 - Panel Mount



Step 1: Prepare the cutout for the surface. Edges must be smooth and free of burrs or debris.



Step 2: Remove dust plugs from Mounting Clamp holes on the rear of the panel.

Step 3: Attach Mounting Bar MTW111 to the rear of the panel. Adjust clamp distance so that it is only slightly greater than mounting surface thickness.

Step 4: Holding the panel at an angle, insert the panel into the hole.

Step 5: On the rear side of the panel, install and tighten the Mounting Clamp MTW110. To ensure even clamping force, tighten clamps on opposite edges following a diagonal pattern across the panel.

Example tightening order indicated below. Continue tightening until the gasket is no longer visible on the panel side.

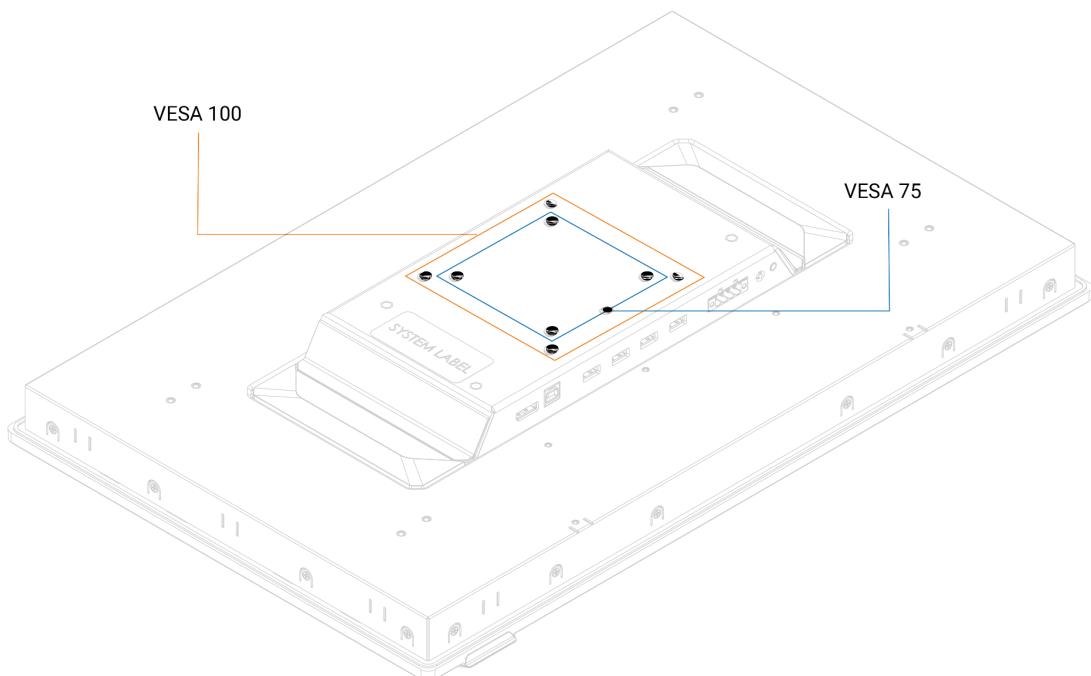
Note: The mounting brackets are required to support 4x the hanging weight of the system.

The mating surface and hardware must be capable of supporting the same load.

3.2 - VESA Mounting

Step 1: Remove the dust plugs protecting the threaded holes for the VESA 75 and VESA 100 mounting on the back of the system.

Step 2: Install the system to VESA 75 or VESA 100 mounting pattern on the heatsink using provided VESA Mount screws.



4 - Power Management

4.1 - Wake-Up Events

The TN101 platform supports 3 power states. Upon power plugged-in, the non compute panel will go to full operation mode(ON). All features of the non compute is operational provided the DP port and USB host port is connected to the compute system. When video data from the computer stops due to system sleep, system shutdown or cable disconnect, the non compute panel will enter low power mode after 5 seconds. The low power mode power consumption is less than 2W. Pressing the power button will transit the non compute panel to off mode with less than xxW power consumption.

The power LED will turn off during off mode, blink on low power mode and continuously turn on during full operation mode.

When the host PC is in sleep mode, the built proximity sensor inside the panel can wake up the system upon object detection. Users can also use the non compute OnLogic apps to do remote ON/OFF with a similar function to the power button.

All features stated above are with the condition of USB cable connected between the non compute and the host PC.

Power State	LED Indicator	Comments
Panel Power ON	ON	
Panel IDLE	Blink	Enter low power mode
Panel Off	OFF	

4.2 - Protection Circuitry

Parameter	Value
Nominal operating voltage (Rated DC value of input)	12~24V (+/-10%)

These DC levels specified are the absolute max values for the pins for function and safety of the system. The protection circuitry allows for brief transient voltages above these levels without the system turning off or being damaged. A transient voltage suppressor on the power input allows momentary excursions above stated limits. For input power consumption and current see [Appendix A](#).

5 - Regulatory Compliance

5.1 - CE

This device has been tested to the relevant EMC and Safety standards. Modifications by the user may invalidate certifications. Testing included EN 55032, EN 55035, EN 60601-1-2, EN 62368-1, and IEC 60945 Ed. 4.

5.2 - FCC Statement

This device complies with part 15 of the FCC rules as a Class A device. 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.

5.3 - ISED (Innovation, Science and Economic Development Canada)

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CAN ICES-003(A) / NMB-003(A)

5.4 - UKCA

The computer system was evaluated for medical, IT equipment, automotive, maritime and railway EMC standards as a class A device. The computer complies with the relevant IT equipment directives for the UKCA mark.

5.5 - VCCI

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI). If this equipment is used in a domestic environment, radio interference may occur, in which case the user may be required to take corrective actions.

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

6 - Appendices

6.1 - Appendix A: Power consumption

The power consumption of the TN101 system was measured for each panel size of normal brightness and high brightness display of the highest end system configurations.

*The configurations below are using representative samples of internal devices, the specific components mentioned below may vary from the devices provided by OnLogic. The power consumption for each display is recorded below.

	Display	Off Mode TN101	S3 Mode TN101	*Minimum Brightness TN101	*Maximum Brightness TN101	*Maximum Brightness TN101 with all USB ports max load
12.1" Screen, PCAP Touch, Normal Brightness, Camera	121-P-NB-C	0.3	0.9	4.9	13.8	26.3
12.1" Screen, PCAP Touch, High Brightness, Camera	121-P-HB-C	0.3	1	5	11.6	24.3
15.6" Screen, PCAP Touch, Normal Brightness, Camera	156-P-NB-C	0.3	1.5	7.1	17.4	29.9
15.6" Screen, PCAP Touch, High Brightness, Camera	156-P-HB-C	0.3	1.4	5.3	25.4	37.9
21.5" Screen, PCAP Touch, Normal Brightness, Camera	215-P-NB-C	0.3	1.5	5.8	14.9	27.0
21.5" Screen, PCAP Touch, High Brightness, Camera	215-P-HB-C	0.3	1.7	7.5	33.2	45.7

*Measured with an all-white screen

6.2 - Appendix B: MCU FW update guide

For a detailed overview of the BIOS screens and individual settings, please refer to the OnLogic support site. Instructions for updating the BIOS can also be found on the support site. Please refer to the link below for detailed instructions.

<https://support.onlogic.com/documentation/tacton-technical-resources/>

6.3 - Appendix C: Panel (Screen) Brightness Control

The brightness is controlled via OnLogic lpmcu-tool, the default setting is full brightness, and the brightness level can be adjusted by the tool commands below.

<https://support.onlogic.com/documentation/tacton-technical-resources/#brightness-control>

6.4 - Appendix D: Cables supported on the Panel

6.4.1 - USB2 Type B cable

6.4.2 - DP to DP cable

6.4.3 - USB Type C to DP cable

6.4.4 - HDMI to DP active cable

6.5 - Appendix H: Panel Operating Temperature, Brightness, and IP Ratings

Camera: 2MP FHD USB camera supports: 1080p (1920x1080), 720p (1280x720), VGA (640x480), QVGA(320x240), QQVGA (160x120)

DISPLAY	SKU	Operating Temp	Storage Temp	Touch Type	Camera	Typical Brightness (Nits)	Ingress Protection Rating (IP)
12.1"	121-R-NB	-20 to 70C	-30 to 85C	Resistive		600	IP66
12.1"	121-P-NB	-20 to 70C	-30 to 85C	Projected Capacitive		600	IP69K

12.1"	121-P-NB-C	-20 to 70C	-30 to 85C	Projected Capacitive	Yes	600	IP66
12.1"	121-R-HB	-20 to 70C	-30 to 85C	Resistive		1000	IP66
12.1"	121-P-HB	-20 to 70C	-30 to 85C	Projected Capacitive		1000	IP69K
12.1"	121-P-HB-C	-20 to 70C	-30 to 85C	Projected Capacitive	Yes	1000	IP66
15.6"	156-R-NB	-20 to 70C	-30 to 85C	Resistive		450	IP66
15.6"	156-P-NB	-20 to 70C	-30 to 85C	Projected Capacitive		450	IP69K
15.6"	156-P-NB-C	-20 to 70C	-30 to 85C	Projected Capacitive	Yes	450	IP66
15.6"	156-R-HB	-20 to 70C	-30 to 85C	Resistive		1000	IP66
15.6"	156-P-HB	-20 to 70C	-30 to 85C	Projected Capacitive		1000	IP69K
15.6"	156-P-HB-C	-20 to 70C	-30 to 85C	Projected Capacitive	Yes	1000	IP66
21.5"	215-R-NB	0 to 60C	-20 to 60C	Resistive		350	IP66
21.5"	215-P-NB	0 to 60C	-20 to 60C	Projected Capacitive		350	IP69K
21.5"	215-P-NB-C	0 to 60C	-20 to 60C	Projected Capacitive	Yes	350	IP66
21.5"	215-R-HB	-10 to 70C	-10 to 80C	Resistive		1000	IP66
21.5"	215-P-HB	-10 to 70C	-10 to 80C	Projected Capacitive		1000	IP69K
21.5"	215-P-HB-C	-10 to 70C	-10 to 80C	Projected Capacitive	Yes	1000	IP66

6.6 - Appendix F: Approved Cleaning Agents

6.6.1 - Resistive Touch Chemical Resistance

6.6.2 - Capacitive Touch Chemical Resistance

NO.	Reagents	Glass				Surface Differences	
		R(%)		T(%)			
		380~780nm before	380~780nm after	380~780nm before	380~780nm after		
No.1	Acetic acid	6.12	5.89	91.17	91.15	No abnormality	
No.2	Phosphoric acid (< 30%) (25%)	6.05	5.88	91.14	91.19	No abnormality	
No.3	Hydrochloric acid (< 10%) (10%)	5.98	5.88	91.19	91.17	No abnormality	
No.4	Nitric acid (< 10%) (10%)	5.91	5.69	91.18	91.16	No abnormality	
No.5	Ammonia (< 2%) (2%)	5.81	5.73	91.18	91.19	No abnormality	
No.6	Sodium hydroxide solution (< 2%) (2%)	5.76	6.09	91.19	91.17	No abnormality	
No.7	Alkali carbonates (2%)	6.07	6.02	91.11	91.51	No abnormality	
No.8	Ethanol	6.00	6.07	91.21	91.23	No abnormality	
No.9	Ethylene glycol	5.99	6.04	91.14	91.20	No abnormality	
No.10	Glycerol	5.90	6.04	91.12	91.23	No abnormality	
No.11	Isopropyl alcohol	5.90	5.96	91.29	91.25	No abnormality	
No.12	Methanol	5.86	6.06	91.11	91.21	No abnormality	
No.13	Formaldehyde	6.09	6.09	91.18	91.22	No abnormality	
No.14	Ethyl acetate	6.16	6.07	91.15	91.21	No abnormality	
No.15	Toluene	6.11	6.04	91.18	91.19	No abnormality	
No.16	Ether	6.10	6.04	91.15	91.22	No abnormality	
No.17	Detergent solutions(Windex)	6.13	6.05	91.13	91.21	No abnormality	
No.18	Cutting oil	6.08	6.05	91.18	91.26	No abnormality	
No.19	Diesel oil	6.12	6.06	91.15	91.22	No abnormality	
No.20	Silicone oil	6.10	6.01	91.19	91.36	No abnormality	
No.21	Pine fragrance	6.10	6.08	91.17	91.19	No abnormality	
No.22	Water (<100°C)	6.09	6.23	91.14	91.21	No abnormality	
No.23	Hydrogen peroxide (3%)	6.16	6.19	91.17	91.20	No abnormality	

The red mark represents the actual concentration of the agent

6.7 - Appendix G: Errata/known issues

6.7.1 - Digital Mic on Panel (DMIC)

The DMIC feature on the TN101 is not supported.

6.7.2 - LPMCU-TOOL UI

lpmcu-tool UI application for OnLogic Factor Series with Raspberry Pi 64 bit OS installed is not supported.

6.7.3 - Touch Screen

Resistive touch type screen requires user to force Raspberry Pi 32bit OS to run on 32bit Kernel.