SPECIFICATION

PART NUMBER:
101916

MODEL:
DL-DM500q-2U

DESCRIPTION:
DOC SPECIFICATION PRODUCT DL-DM500q TOUCH DISPLAY COMPUTER

VERSION:
1.0

_____   _____   _____
Customer Name   Customer Approval   Date

Revision Status

Revision	Revision Date	Page	Content	Notes
0.1	2019-07-09		Initial draft release	
0.2	2019-07-15	16	Add dead or hot pixel policy	
0.3	2019-08-03	8, 13	Update Connector View and add Label View	
0.4	2020-02-18	7	Correct typing mistake NXP i.MX4Q to i.MX6Q	
		13	Update Product Label to include Keysight Part Number	
		15	Update Shipping Label to include Keysight Part Number	
		16	Update European RoHS Directive to 2011/65/EU	
1.0	2020-03-04	14	Add unit packaging box	
		15	Update Shipping Label	

Table of Content

1   Cautions and Warnings

WARNING!
Do not apply a power supply voltage above 32V.
Do not open the device.
If device shows any sign of damage, do not connect power and return device to the factory for service.
If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
**Power Cable connected to the device has to be rated at 90degC or higher.**

2   Introduction

The DL-DM500q-2U is an advanced 5.0-inch Touch Display Computer that has been built for industrial applications. The display uses IPS technology to provide a ultra-wide viewing angle and has 550-nit backlight which makes it suitable for a wide range of applications. The Touch Panel uses state of the art adaptive-sensing technology to ensure optimal touch performance with the highest possible noise immunity. The Touch Panel and Display are optically bonded to reduce reflections and provide a clear view from a wide range of angles. The Touch Display Computer has industry standard interfaces which makes it easy to connect to other systems and networks. The Touch Display Computer has been designed and is tested to withstand hostile environments and works in an ambient temperature range from -20°C to 70°C.

Key features:
- High Quality fully integrated Aluminium Frame
- 5.0-inch IPS Display Panel with ultra-wide viewing angle and 550 cd/m² brightness
- High resolution capacitive multi-touch panel with Glove Touch, Water Droplets and Moisture support
- IP66 rated front panel
- Power Input from 10V to 32V
- Standard interfaces: 2x Ethernet with built in Gigabit Ethernet Switch, USB Type-A, 2x Serial, GPIO and PWM
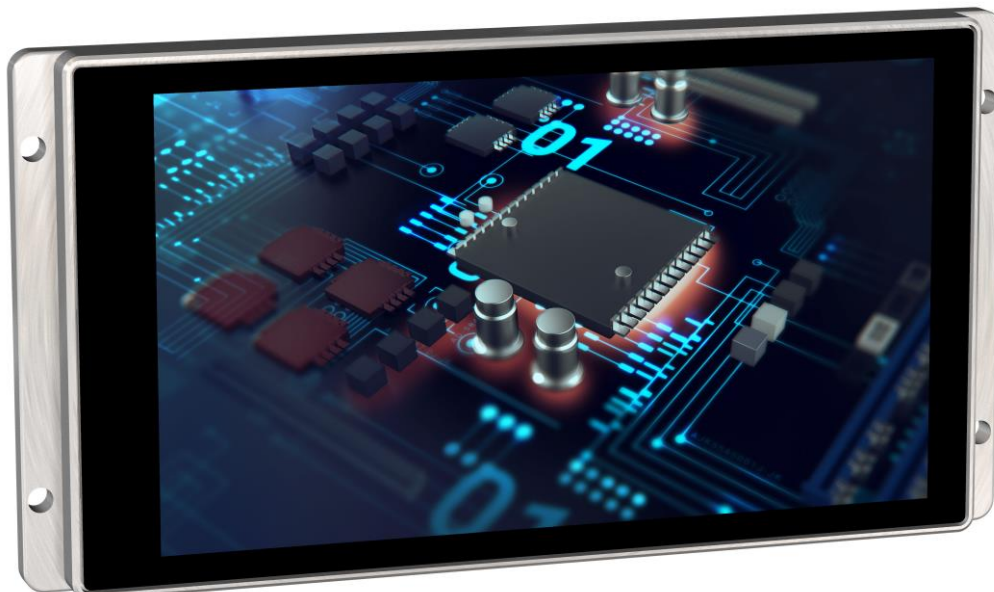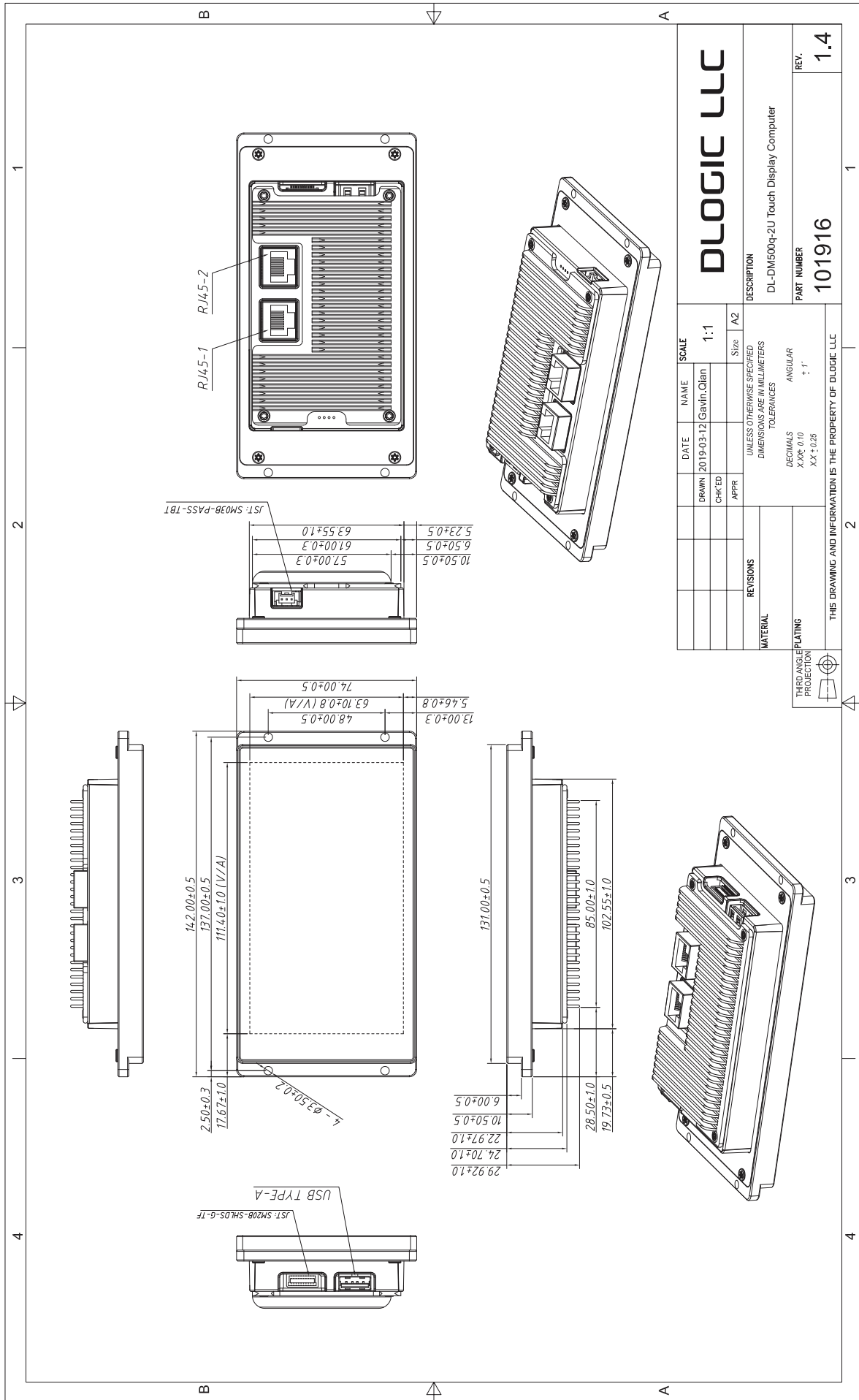

101916 DL-DM500q-2U Front View

101916 DL-DM500q-2U Connector View, Power Connector

101916 DL-DM500q-2U Connector View, USB & 20-pin IO Connector

3   Dimension Drawing

RJ45-2

RJ45-1

JST: SM03B-PASS-TBT

63.55±1.0
61.00±0.3
57.00±0.3
6.50±0.5
10.50±0.5
5.23±0.5

74.00±0.5
63.10±0.8 (V/A)
5.46±0.8
48.00±0.5
13.00±0.3

142.00±0.5
137.00±0.5
114.0±1.0 (V/A)

2.50±0.3
17.67±1.0
4 - Ø3.50±0.2

131.00±0.5
85.00±1.0
102.55±1.0

6.00±0.5
10.50±0.5
22.97±1.0
24.70±1.0
29.92±1.0

28.50±1.0
19.73±0.5

USB TYPE-A

JST: SM20B-SHLDS-G-TF

DLOGIC LLC

DESCRIPTION
DL-DM500q-2U Touch Display Computer

PART NUMBER
101916

REV.
1.4

SCALE 1:1

NAME Gavin.Qian

DATE 2019-03-12

DRAWN

CHK'ED

APPR

Size A2

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES
DECIMALS   ANGULAR
X.XX± 0.10   ± 1°
X.X± 0.25

REVISIONS

MATERIAL

PLATING

THIRD ANGLE
PROJECTION

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4   Specification Summary

Target Processor	
Processor Board	DLOGIC DL-PM64 Processor Board
Processor	NXP i.MX6Q Automotive Applications Processor Quad Core Cortex A9
Clock	1 GHz
SDRAM	2GB DDR3L (Industrial)
Storage	8GB e.MMC Flash (Industrial), 2 MB NOR-Flash (Industrial)

Display	
Display	DLOGIC IPS 5.0-inch
Resolution	854x480
Interface	MIPI
Color Depth	24-bit
Brightness	550 cd/m²d

Touch Interface	
Touch Screen Type	Projective Capacitive Multi-Touch Panel
Controller	Microchip mXT640u

Protection	
Glass	1.1mm
Surface Hardness	6H, chemically hardened

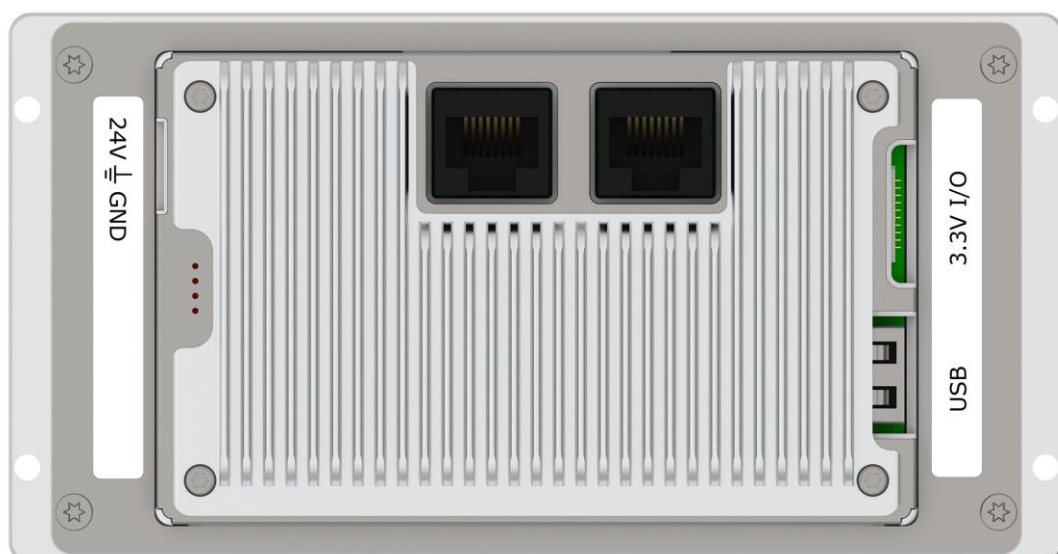| Power	
Input	10-32Vdc
Power Consumption	10W

Weight	
Net Weight	0.45kg

5   Connectors

5.1   Connector Panel & Labels

3-pin Power Connector and 20-pin Interface Connector	Label Artwork
	24V ⏚ GND

USB & Ethernet Connector and microSD Card holder	Label Artwork
	USB 3.3V I/O

5.2   Connector Label Placement
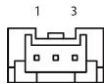
5.3 Power

	Manufacturer:	Part Number:
PCB Connector:	JST	SM03B-PASS-TBT
Cable Connector:	JST	PAP-03V-S
Crimp Pin:	JST	SPHD-001T-P0.5

Connector Specification:	
Voltage rating:	250V AC, DC
Current rating:	3.0A AC, DC (AWG22)
Mechanical:	Secure locking mechanism
	Mechanical prevention from inverse insertion
UL & CSA:	UL Recognized E60389, CSA Certified LR20812

Power Connector Pinout

Pin:	Signal Name:	Function:	
1	Vcc	10 – 32Vdc	
2	Shield	Shield	
3	GND	Ground	

WARNING: Power Cable connected to the device has to be rated 90degC or higher.
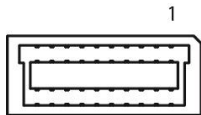
5.4 Communication Interfaces

	Manufacturer:	Part Number:
PCB Connector:	JST	SM20B-SHLDS-G-TF
Cable Connector:	JST	SHLDP-20V-S-1
Crimp Pin:	JST	SSHL-003GA1-P0.2

Connector Specification:	
Voltage rating:	50V AC, DC
Current rating:	1A AC, DC (AWG 28)
Mechanical:	Secure locking mechanism
	Mechanical prevention from inverse insertion
UL Recognized:	E60389

Communication Interface 20-pin

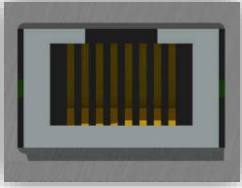| Pin:	Signal Name:	Direction:	Function:	CPU Pin	
1	3.3V	OUT	Vcc = 3.3V / 50mA max.		
2	GND	OUT	Ground		
3	RS-232 TxD 3	OUT	Serial Interface 3 - TxD	B17	
4	GPIO4_IO10	IN / OUT	GPIO 4_10	W6	
5	RS-232 RxD 3	IN	Serial Interface 3 - RxD	E16	
6	GPIO4_IO11	IN / OUT	GPIO 4_11	W4	
7	RS-232 TxD 2	OUT	Serial Interface 2 - TxD	R3	
8	ISO_5V	IN	ISO_5V (not used)		
9	RS-232 RxD 2	IN	Serial Interface 2 - RxD	R5	1
10	GPIO2_IO24	IN / OUT	GPIO 2_24	J23	
11	GPIO1_IO02	IN / OUT	GPIO 1_2	T1	
12	GPIO2_IO25	IN / OUT	GPIO 2_25	J24	
13	GPIO3_IO28	IN / OUT	GPIO 3_28	G23	
14	ISO_GND	IN	ISO Ground (not used)		
15	GPIO2_IO04	IN / OUT	GPIO 2_4	A19	
16	PWM1	OUT	Pulse Modulated Output 1	T2	
17	GPIO2_IO26	IN / OUT	GPIO 2_26	K20	
18	SPDIF_OUT	OUT	Digital Audio Out	P5	
19	5.0V	OUT	Vcc = 5.0V / 50mA max.		
20	PWM4	OUT	Pulse Modulated Output 4	F17	

Maximum current for all GPIO/PWM pin 4, 6, 10, 11, 12, 13, 15, 16, 17, 20: 1mA
Maximum current for 3.3V supply pin 1: 50mA
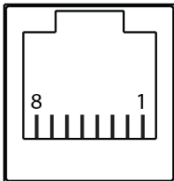Maximum current for 5.0V supply pin 19: 50mA

5.5   Ethernet

	Manufacturer:	Part Number:
PCB Connector:	Industry Standard	RJ45
Cable Connector:	Industry Standard	CAT5e or CAT6 Ethernet Cable

Connector Specification:	
Voltage rating:	125V AC, DC
Current rating:	1.5A AC, DC
Speed:	10/100/1000 Mbps
Mechanical:	Secure locking mechanism with tab
	Mechanical prevention from inverse insertion

Ethernet Connector Pinout

Pin:	Signal Name:	Function:	
1	TA+	Transmit A+	
2	TA-	Transmit A-	
3	TB+	Transmit B+	
4	TC+	Transmit C+	
5	TC-	Transmit C-	
6	TB-	Transmit B-	
7	TD+	Transmit D+	
8	TD-	Transmit D-	
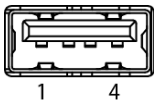
5.6   USB

	Manufacturer:	Part Number:
PCB Connector:	Industry Standard	Horizontal USB2.0
Cable Connector:	Industry Standard	Cable Connector USB2.0

Connector Specification:	
Voltage rating:	30V AC, DC
Current rating:	1.8A (Pin1, 4), 0.25A (Pin2, 3)
Mechanical:	Mechanical prevention from inverse insertion
	Insertion Force: 35N max, Withdrawal Force: 8N min.

USB Connector Pinout

Pin:	Signal Name:	Function:	
1	Vcc	Vcc 5V	
2	D-	Data -	
3	D+	Data +	
4	GND	Ground	

Warning: The USB port is not for device charging. The USB port is only for data transfer.

6   Product Label

6.1   Label

Label:	Description:
Size	90mm x 10.5mm, rounded corners
Material	YUPOTACK, SGS 60, Water proof, tear resistant
Color	White

6.2   Position

The label is on the Side panel of the electronic housing, on the upper side when installed in machine.
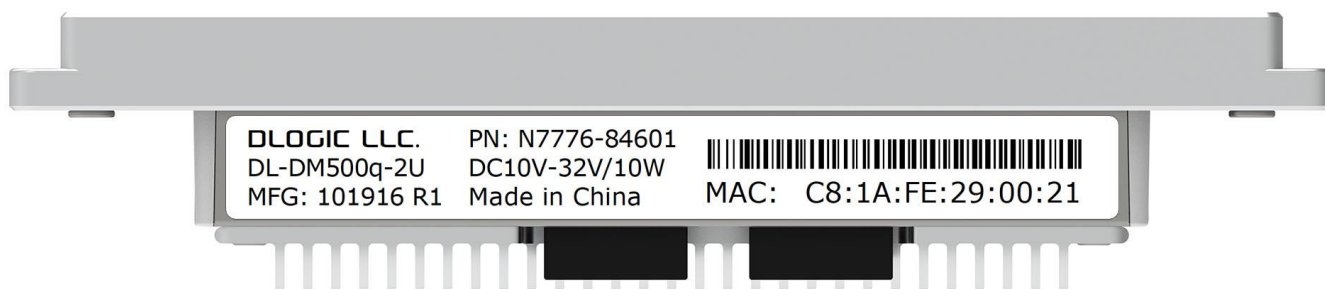
6.3   Artwork

7   Packaging Specification

7.1   Product Box

Description:	Dimensions (mm)
Product Box	L=178 x W=147mm, H=53mm, T=3.0mm
Material	Cardboard K3K
Color	Brown

Product Box with 101916 DL-DM500q-2U Display Modules

7.2   Shipping Box and Pallet Loading

Description:	Dimensions (mm)
Shipping Carton Size	L=500 x W=400mm, H=200mm, T=6.5mm
Material	Cardboard K=K
Color	Brown
Modules per Carton	21 units
Pallet Size	L=1200 x W = 1000mm, H = 150mm
Boxes per Layer	6 boxes
Layers per Pallet	5 layers
Total Boxes per Pallet	30 boxes
Total Modules per Pallet	630 units
Net Unit Weight	0.45 kg
Shipping box with 21 units	21 x 0.45 kg unit + 1.55 kg box = 11.0 kg
Pallet with 30 boxes	30 x 11.0 kg + 25 kg pallet = 355 kg

Note: Air-shipment and small quantity order ship without pallet to minimize shipping cost.
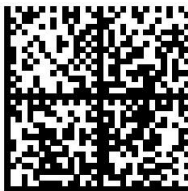
7.3   Shipping Label

Label:	Description:
Size	101mm x 76mm, rounded corners
Material	Paper, self-adhesive
Color	White

7.3.1   Position:

Shipping labels are placed on the short side of the box in the upper left corner. The labels are placed on both short sides. The position of the label ensures that one label is always visible when the boxes are stacked on a pallet.

7.3.2   Artwork:

8   Quality

8.1   Environmental Conditions

Operating Temperature	-20°C to +70°C
Storage Temperature	-30°C to +70°C
Humidity range	5% to 95% RH, non-condensing
RoHS	Compliant with European Union Directive 2011/65/EC and subsequent amendments
Ingress Protection Rating	Front Panel IP66

8.2   Bright and Dead Pixel Policy

Defect:	Allowed:	Test Condition:
Bright Pixel allowed:	0	Inspected on black screen with backlight at 90% brightness
Dead Pixel allowed:	0	Inspected on white screen with backlight at 90% brightness
Other anomalies	Allowed as long as they are not visible at a distance of 30 cm from the screen.	Inspected on black and white screen with backlight at 90% brightness.

8.3   Precautions using Products with Liquid Crystal Display

8.3.1   Safety & Health

- Do not attempt to disassemble the Touch Display Computer.
- If the Touch Display Computer is damaged and the liquid crystal substance leaks out, be sure not to get any in your mouth. If the substance contacts your skin or clothes, wash it off using soap and water.
- If the housing is damaged, cracked or broken don't connect power.

8.3.2   Operation Caution

- The touch panel and display panel are made of glass. Do not subject it to mechanical shock.
- Do not apply excessive force to the glass surface or the adjoining areas since this may cause damage.

8.3.3   Cleaning of the Touch Display Computer

- If the Touch Display Computer surface is contaminated, breathe on the surface and gently wipe it with a soft dry cloth. If still not completely clear, moisten cloth with one of the following solvents: Isopropyl alcohol, ethyl alcohol
- Solvents other than those mentioned above may damage the touch panel or display. Especially, do not use the following: Ketone solvents or Aromatic solvents

8.3.4 Storage precautions

- Avoid exposure of the Touch Display Computer to direct sunlight or to the light of fluorescent lamps during storage.
- Touch Display Computer need to be stored within the storage temperature range.
- If the Touch Display Computer is stored for a long time, the recommend conditions are:
- Temperature: 0°C ~ 40°C, Relatively humidity: ≤80%
- Touch Display Computer should be stored in a room without acid, alkali and harmful gases.

8.3.5 Transportation Precautions

- Touch Display Computer can't be dropped or exposed to violent shook during transportation. As well avoid excessive pressure, water, damp environments and sunshine.

9   Warranty

Unless otherwise agreed between DLOGIC GmbH (DLOGIC) and the customer, DLOGIC will replace or repair any of its products that are found to be functionally defective when inspected in accordance with DLOGIC's acceptance criteria (copies available upon request) for a period of two year from date of shipment. Cosmetic / Visual defects must be returned to DLOGIC within 120 days of shipment. Confirmation of such date shall be based on freight documents. The warranty liability of DLOGIC is limited to the repair and/or replacement on the terms set forth above. DLOGIC will not be responsible for any subsequent or consequential losses and/or events.

Returning Products under Warranty

No warranty can be granted if the precautions stated above have been disregarded. The typical examples of violations are:

- Broken Glass, Touch Panel or LCD glass
- The Touch Display Computer was opened or disassembled in any way
- Circuits are modified in any way, including addition of components

Product repairs will be invoiced to the customer upon mutual agreement. Products must be returned with sufficient description of the failures and/or defects. Any connectors or cables installed by the customer must be removed completely prior to returning the product.
The product must be returned in the original packaging to avoid any damage during transportation.

10 Intellectual Property, Copyright and Trademark

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