

TEST REPORT

Report No.: **DG1210628-25750E**

Date: July 06, 2021

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Shenzhen Sonoff Technologies Co.,Ltd.
1001, BLDG8, Lianhua Industrial Park, shenzhen, GD, China

Report on the submitted samples said to be:

Sample Description: NEXTION HMI TOUCH SCREEN
Style/Item No.: NX4832F035,NX3224F024, NX3224F028
Brand: NEXTION
Sample Receiving Date: June 28,2021
Testing Period: June 28,2021 - July 06,2021
Result: Please refer to next page(s).

Signed for and on behalf of

BACL



Checked by: _____

Jane Xu



Approved by: _____

Bensen Huang



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Summary of Test Result:

TEST REQUEST

CONCLUSION

A RoHS Directive 2011/65/EU and its amendment directives (EU) 2015/863

Pass

A.1 XRF screening test

Please refer to next page(s).

A.2 Wet Chemical Testing

A.2.1 Chromium VI (CrVI) content

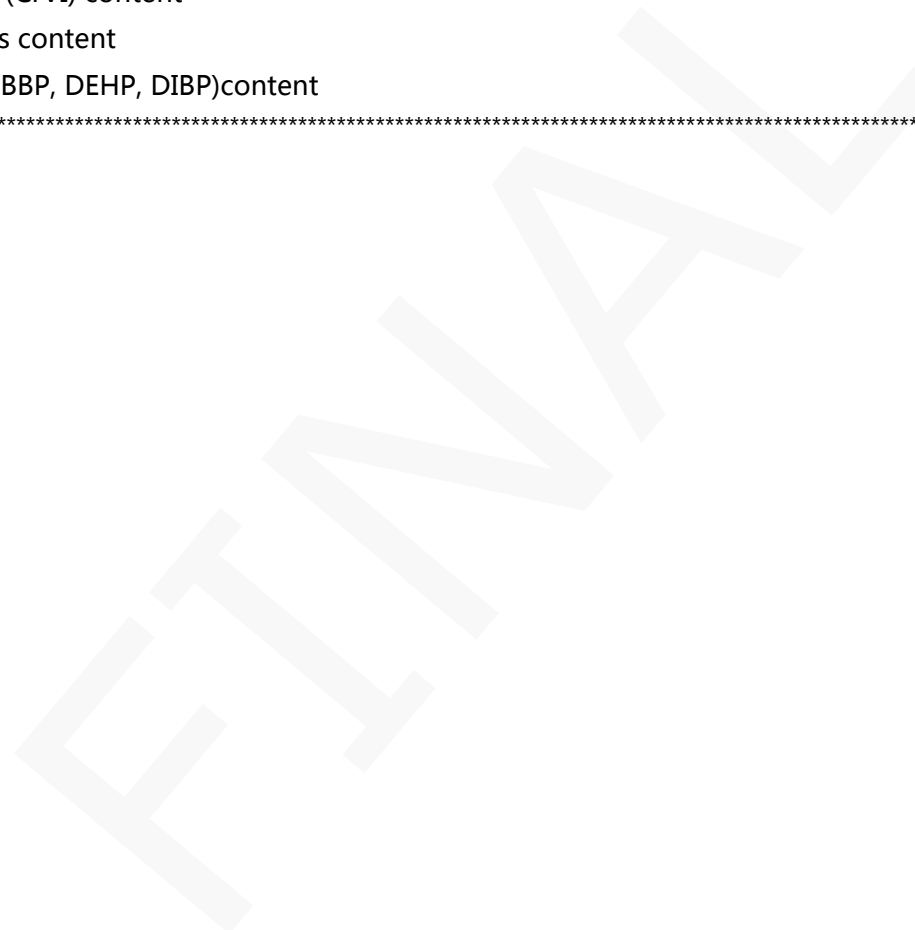
Pass

A.2.2 PBBs & PBDEs content

Pass

A.3 Phthalates(DBP, BBP, DEHP, DIBP)content

Pass



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A RoHS Directive 2011/65/EU and its amendment directives (EU) 2015/863

A.1 XRF screening test

Test method: IEC 62321-3-1:2013

Seq No.	Tested Part(s)	Result				
		Pb	Cd	Hg	Cr	Br
(1)*	Silvery metal with black coating (base , screen) [1][2][3]	BL	BL	BL	IN	---
(2)	Black adhesive foam (cushion , screen) [1][2][3]	BL	BL	BL	BL	BL
(3)	Beige glue (base fixer , screen) [1][2][3]	BL	BL	BL	BL	BL
(4)	Black transparent glass (screen) [1][2][3]	BL	BL	BL	BL	BL
(5)	Transparent glass with black coating (screen) [1][2][3]	BL	BL	BL	BL	BL
(6)	White plastic (film , screen) [1][2][3]	BL	BL	BL	BL	BL
(7)	Multicolor plastic (film , screen) [1][2][3]	BL	BL	BL	BL	BL
(8)	Translucent plastic (film , screen) [1][2][3]	BL	BL	BL	BL	BL
(9)	Silvery/black plastic (film , screen) [1][2][3]	BL	BL	BL	BL	BL
(10)	Transparent plastic (screen) [1][2][3]	BL	BL	BL	BL	BL
(11)	White plastic (frame , screen) [1][2][3]	BL	BL	BL	BL	BL
(12)	Silvery metal (pin , small FPC , screen) [1][2][3]	BL	BL	BL	BL	---
(13)	Silvery solder (small FPC , screen) [1][2][3]	BL	BL	BL	BL	---
(14)	Yellow FPC (small FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(15)	White body (LED , mid FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(16)	Golden metal (pin , mid FPC , screen) [1][2][3]	BL	BL	BL	BL	---
(17)	Silvery solder (mid FPC , screen) [1][2][3]	BL	BL	BL	BL	---
(18)	Yellow FPC (mid FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(19)	Golden metal (pin , big FPC , screen) [1][2][3]	BL	BL	BL	BL	---
(20)	Brown plastic (pin holder , big FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(21)	Yellow translucent plastic (tape , big FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(22)	Black body (triode , big FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(23)	Black body (resistor , big FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(24)	Black/white body with white printing (resistor , big FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(25)	Grey body (capacitor , big FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(26)	Black body (EC , big FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(27)	Black body (IC , big FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(28)	Silvery metal (base , big FPC , screen) [1][2][3]	BL	BL	BL	BL	---

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Seq No.	Tested Part(s)	Result				
		Pb	Cd	Hg	Cr	Br
(29)	Silvery solder (big FPC , screen) [1][2][3]	BL	BL	BL	BL	---
(30)	Yellow/green FPC (big FPC , screen) [1][2][3]	BL	BL	BL	BL	BL
(31)*	Beige plastic (pin holder , socket "J1" , PCB) [1][2][3]	BL	BL	BL	BL	IN
(32)	Silvery metal (pin , socket "J1" , PCB) [1][2][3]	BL	BL	BL	BL	---
(33)	Silvery metal (shell , socket "K1" , PCB) [1][2][3]	BL	BL	BL	BL	---
(34)	Black plastic (buckle , socket "K1" , PCB) [1][2][3]	BL	BL	BL	BL	BL
(35)	Silvery metal (spring , socket "K1" , PCB) [1][2][3]	BL	BL	BL	BL	---
(36)	Golden metal (pin , socket "K1" , PCB) [1][2][3]	BL	BL	BL	BL	---
(37)	Black plastic (pin holder , socket "K1" , PCB) [1][2][3]	BL	BL	BL	BL	BL
(38)	Grey plastic (shell , socket "J4" , PCB) [1][2][3]	BL	BL	BL	BL	BL
(39)	Silvery metal (pin , socket "J4" , PCB) [1][2][3]	BL	BL	BL	BL	---
(40)	White plastic (pin holder , socket "J4" , PCB) [1][2][3]	BL	BL	BL	BL	BL
(41)	Black body (diode "D4" , PCB) [1][2][3]	BL	BL	BL	BL	BL
(42)	Black body (diode , PCB) [1][2][3]	BL	BL	BL	BL	BL
(43)	Black body (triode , PCB) [1][2][3]	BL	BL	BL	BL	BL
(44)	White/black body with white printing (resistor "R1" , PCB) [1][2][3]	BL	BL	BL	BL	BL
(45)	Black body (resistor , PCB) [1][2][3]	BL	BL	BL	BL	BL
(46)	Grey body (capacitor , PCB) [1][2][3]	BL	BL	BL	BL	BL
(47)	Silvery adhesive fabric (cushion , PCB) [1][2][3]	BL	BL	BL	BL	BL
(48)	Silvery solder (PCB) [1][2][3]	BL	BL	BL	BL	---
(49)	Yellow PCB (PCB) [1][2][3]	BL	BL	BL	BL	BL

Note:

[1]NX4832F035 [2]NX3224F024 [3] NX3224F028

Note:

--- = Not Applicable.

* = Screening by XRF and detected by chemical method. The test result of chemical method please refer to next pages.

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Remark:

i Result were obtained by XRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the below warning value according to IEC62321-3-1:2013.

Element	Unit	Polymers	Metal	Composite Material
Cd	mg/kg	BL≤70-3σ<X <130+3σ≤OL	BL≤70-3σ<X <130+3σ≤OL	BL≤50-3σ<X <150+3σ≤OL
Pb	mg/kg	BL≤700-3σ<X <1300+3σ≤OL	BL≤700-3σ<X <1300+3σ≤OL	BL≤500-3σ<X <1500+3σ≤OL
Hg	mg/kg	BL≤700-3σ<X <1300+3σ≤OL	BL≤700-3σ<X <1300+3σ≤OL	BL≤500-3σ<X <1500+3σ≤OL
Cr	mg/kg	BL≤700-3σ<X	BL≤700-3σ<X	BL≤500-3σ<X
Br	mg/kg	BL≤300-3σ<X	--	BL≤250-3σ<X

Note:

BL = Below Limit

OL = Over Limit

IN / X = Inconclusive (questionable, need further chemical analysis)

ii The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

iii The maximum permissible limit is quoted from the RoHS directive 2011/65/EU:

RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium (Cd)	100
Lead (Pb)	1000
Mercury (Hg)	1000
Hexavalent Chromium (Cr(VI))	1000
Polybrominated biphenyls (PBBs)	1000
Polybrominated diphenylethers (PBDEs)	1000

Disclaimers:

This XRF Screening report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes.

The result shown in this XRF screening report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

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A.2 Wet Chemical Testing

A.2.1 Chromium VI (CrVI) content

Test method: IEC 62321-7-1:2015

Item	Unit	RL	Result	Limit
			(1)	
hexavalent chromium(Cr VI)	µg/cm ²	0.10	N.D.	See Remark
Conclusion	/	/	Pass	/

Limit Remark:

- The sample is positive for CrVI if the CrVI concentration is greater than 0.13µg/cm². The sample coating is considered to contain CrVI
 - The sample is negative for CrVI if CrVI is ND (concentration less than 0.10µg/cm²). The coating is considered a non-CrVI based coating
 - The result between 0.10µg/cm² and 0.13µg/cm² is considered to be inconclusive -unavoidable coating variations may influence the determination
- For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

Note:

- N.D. = Not Detected or less than RL
- RL = Report Detection Limit
- mg/kg = ppm

A.2.2 PBBs & PBDEs content

Test method: IEC 62321-6:2015

Item	Unit	RL	Result	Limit
			(31)	
Monobromobiphenyl (MonoBB)	mg/kg	5	N.D.	-
Dibromobiphenyl(DiBB)	mg/kg	5	N.D.	-
Tribromobiphenyl(TriBB)	mg/kg	5	N.D.	-
Tetrabromobiphenyl(TetraBB)	mg/kg	5	N.D.	-
Pentabromobiphenyl(PentaBB)	mg/kg	5	N.D.	-
Hexabromobiphenyl(HexaBB)	mg/kg	5	N.D.	-
Heptabromobiphenyl (HeptaBB)	mg/kg	5	N.D.	-
Octabromobiphenyl(OctaBB)	mg/kg	5	N.D.	-
Nonabromobiphenyl(NonaBB)	mg/kg	5	N.D.	-
Decabromobiphenyl(DecaBB)	mg/kg	5	N.D.	-
Monobromodiphenyl ether (MonoBDE)	mg/kg	5	N.D.	-
Dibromodiphenyl ether (DiBDE)	mg/kg	5	N.D.	-

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Item	Unit	RL	Result					Limit
			(31)					
Tribromodiphenyl ether (TriBDE)	mg/kg	5	N.D.					-
Tetrabromodiphenyl ether (TetraBDE)	mg/kg	5	N.D.					-
Pentabromodiphenyl ether (PentaBDE)	mg/kg	5	N.D.					-
Hexabromodiphenyl ether (HexaBDE)	mg/kg	5	N.D.					-
Heptabromodiphenyl ether (HeptaBDE)	mg/kg	5	N.D.					-
Octabromodiphenyl ether (OctaBDE)	mg/kg	5	N.D.					-
Nonabromodiphenyl ether (NonaBDE)	mg/kg	5	N.D.					-
Decabromodiphenyl ether (DecaBDE)	mg/kg	5	N.D.					-
sum of MonoBB,DiBB, TriBB, TetraBB, PentaBB, HexaBB, HeptaBB, OctaBB, NonaBB, DecaBB	mg/kg	-	N.D.					1000
sum of MonoBDE, DiBDE, TriBDE, TetraBDE, PentaBDE, HexaBDE, HeptaBDE, OctaBDE, NonaBDE, DecaBDE	mg/kg	-	N.D.					1000
Conclusion	/	/	Pass					/

Note:

- N.D.= Not Detected or less than RL
- RL = Report Detection Limit
- mg/kg = ppm
- The Result less than RL are not taken into account while calculating the sum contents.

A.3 Phthalates(DBP, BBP, DEHP, DIBP)content

Test method: IEC 62321-8:2017

Item	Unit	RL	Result						Limit
			(2)+(3)+(4)	(5)+(11)+(14)	(6)+(7)	(8)+(9)	(10)	(15)+(18)+(20)	
Dibutyl Phthalate(DBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Benzyl Butyl Phthalate(BBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Bis-(2-ethylhexyl) Phthalate (DEHP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1000

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Item	Unit	RL	Result						Limit
			(2)+(3)+(4)	(5)+(11)+(14)	(6)+(7)	(8)+(9)	(10)	(15)+(18)+(20)	
Diisobutyl phthalate(DIBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Conclusion	/	/	Pass	Pass	Pass	Pass	Pass	Pass	/

Item	Unit	RL	Result				Limit
			(21)+(22)+(23)	(24)+(25)+(26)	(27)+(30)+(31)	(34)+(37)+(38)	
Dibutyl Phthalate(DBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Benzyl Butyl Phthalate(BBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Bis-(2-ethylhexyl) Phthalate (DEHP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Diisobutyl phthalate(DIBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Conclusion	/	/	Pass	Pass	Pass	Pass	/

Item	Unit	RL	Result			Limit
			(40)+(41)+(42)	(43)+(44)+(45)	(46)+(47)+(49)	
Dibutyl Phthalate(DBP)	mg/kg	30	N.D.	N.D.	N.D.	1000
Benzyl Butyl Phthalate(BBP)	mg/kg	30	N.D.	N.D.	N.D.	1000
Bis-(2-ethylhexyl) Phthalate (DEHP)	mg/kg	30	N.D.	N.D.	N.D.	1000
Diisobutyl phthalate(DIBP)	mg/kg	30	N.D.	N.D.	N.D.	1000
Conclusion	/	/	Pass	Pass	Pass	/

Note:

- N.D. = Not Detected or less than RL
- RL = Report Detection Limit
- 0.1% = 1000 mg/kg, mg/kg = ppm
- "+" = Mixed, The admixture of specimen is tested as a whole(part)which according to the applicant' s request, the result of report as average value because of the whole specimen is regarded as constituting from the homogeneous material. If the testing of specimen may have the obvious difference, and the result may exceed the number in this report. The applicant will undertake all differences and risk.

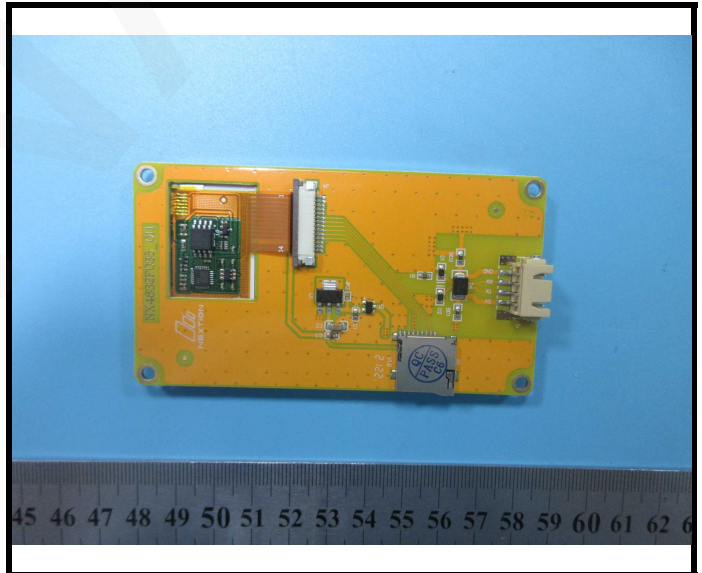
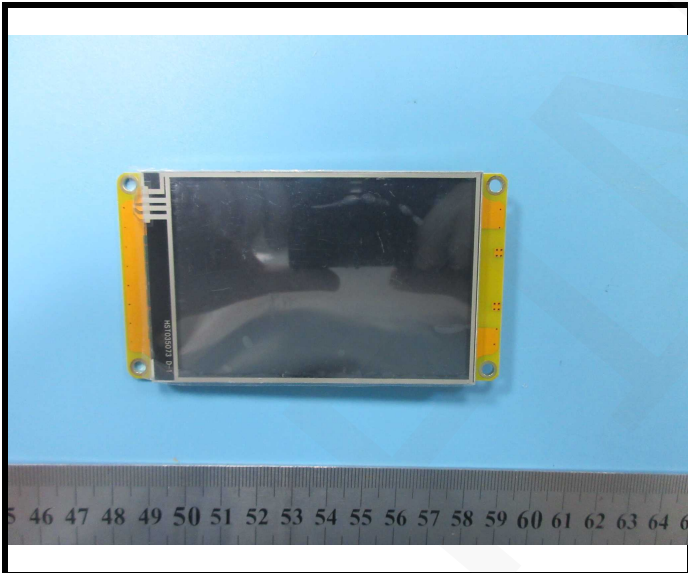
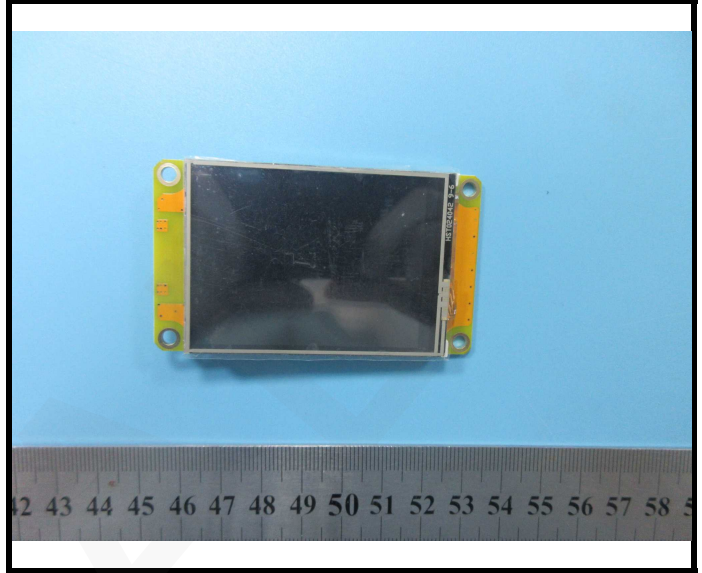
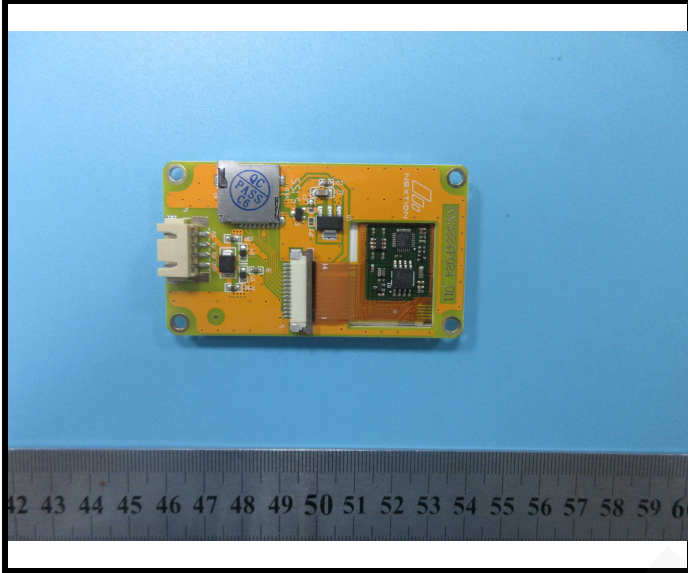
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Photograph of Sample

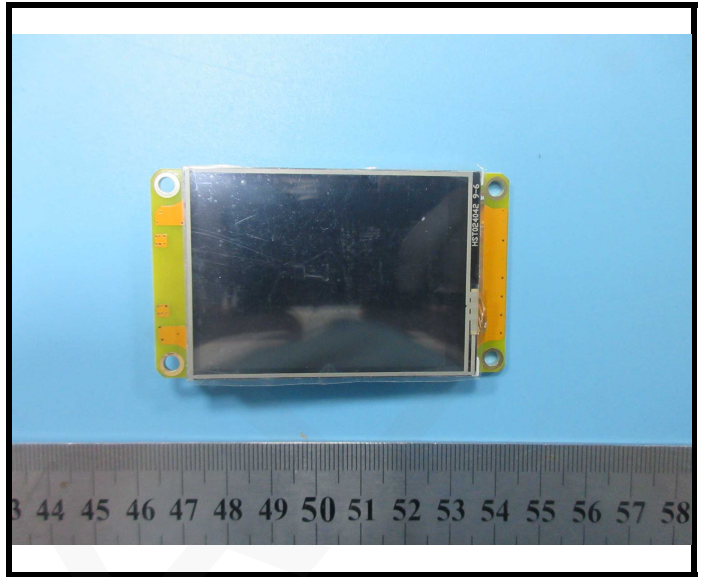
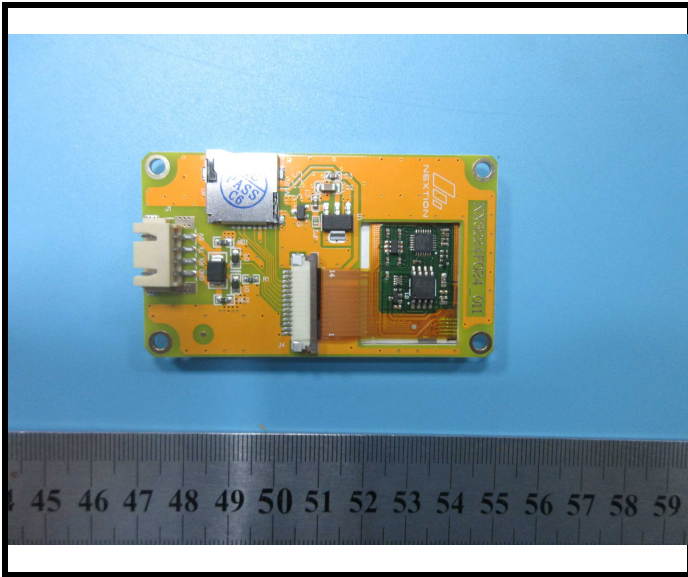


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Statement:

- 1.This report cannot be reproduced except in full, without prior written approval of the Company.
- 2.Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
- 3.This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.
- 4.Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
- 5.The information which provided by the applicant, such as sample description, sample name, material component, style/item No. , P.O. No. , manufacturer, age phase, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
- 6.The test samples were in good condition before testing.
- 7.The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

*** End of Report ***