

## Verification Report

No. XMNEC2300631401

Date: 16 May 2023

Page 1 of 10

Client Name : FuYanSheng Electronic (FuJian) Co., Ltd.

Client Address : 009, Area A1, Building 1, Science and Technology Innovation Center, National University Science and Technology Park, No. 6 Qiuyang East Road, Shangjie Town, Minhou County, Fujian Province, China

Sample Name : IO Module

Tested Basic Model No. FNI IOL-106-006-K20

(P.O.No) :

Tested Extended Model No. FNI ECT-106-104-K54

(P.O.No) :

Client Ref. Info. : USE FOR FNI XXX-XXX-XXX-XXX/FNI XXX-XXX-XXX-XXX-X

The above sample(s) and information were provided by the client.

SGS Job No. : 23500503 - XM

Date of Sample Received : 20 Apr 2023

Verification Period : 20 Apr 2023 - 12 May 2023

Verification Requested : With reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.

Verification Method(s) : Please refer to next page(s).

Verification Result(s) : Please refer to next page(s).

### Test Result Summary

Test Items	Conclusion
Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP) listed in RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU	PASS

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd. Xiamen Branch

*Rae Chen*

Rae Chen  
Approved Signatory

scan to see the report



782A4EC6



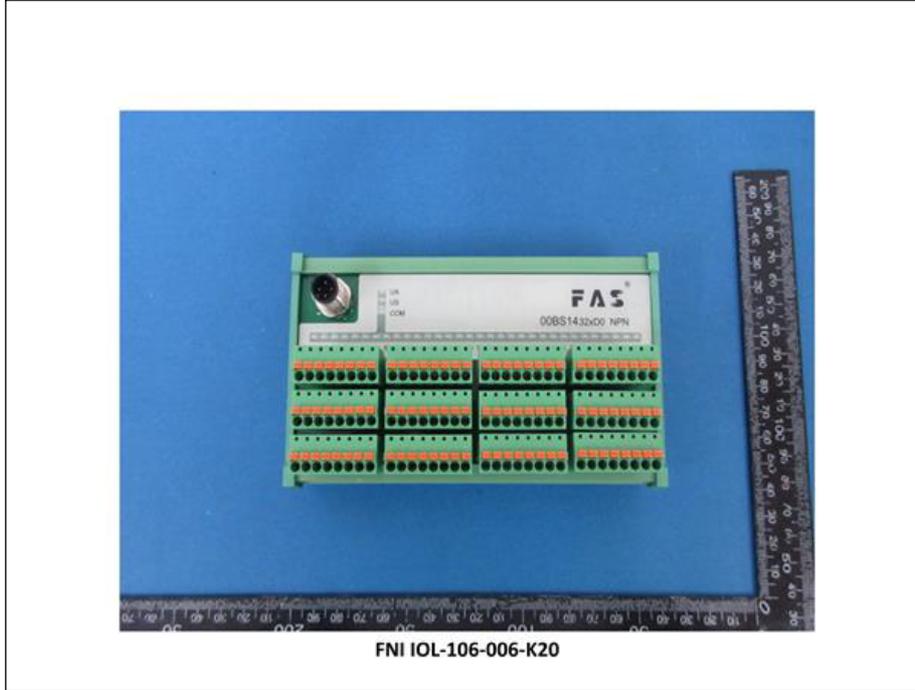
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

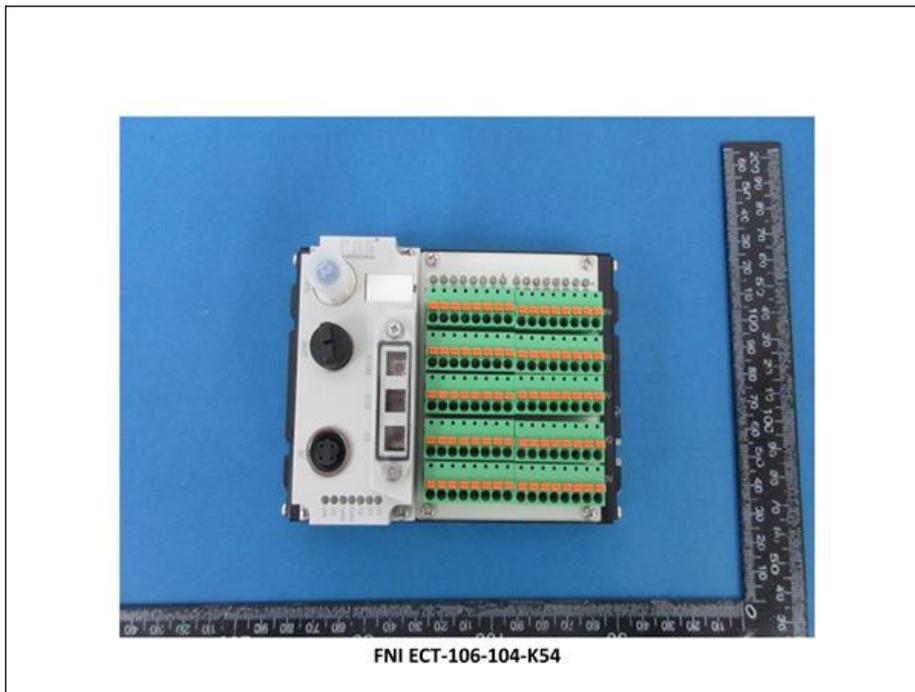
SGS-CSTC Standards Technical Services Co., Ltd.  
Xiamen Branch Testing & Calibration Laboratory

No. 31 Xianghong Road, Xiang' An Torch Industrial Zone, Xiamen, Fujian Province, China 361101 t (86-592) 5766995 f (86-592) 5766999 www.sgsgroup.com.cn  
中国·福建·厦门市火炬(翔安)产业区翔虹路31号 邮编: 361101 t (86-592) 5766995 f (86-592) 5766999 e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

Photo of Submitted Sample



FNI IOL-106-006-K20



FNI ECT-106-104-K54



**Verification Method(s) :**

1. With reference to IEC 62321-2:2021, review was performed for the samples disjointed from the submitted articles.
2. With reference to IEC 62321-1:2013, tests were performed for the samples indicated by the photos in this report
  - (1) With reference to IEC 62321-3-1:2013, screening by EDXRF spectroscopy.
  - (2) Wet chemical test method: With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC 62321-7-1:2015, IEC 62321-7-2:2017, ISO 17075-1:2017, IEC 62321-6:2015 and IEC 62321-8:2017 , analyzed by ICP-OES,UV-Vis and GC-MS.

**Verification Part Description :**

SN ID	Sample No	SGS Sample ID	Description
SN1	A1	XMN23-006314.001	FNI IOL-106-006-K20 - Green plastic frame
SN2	A2	XMN23-006314.002	FNI IOL-106-006-K20 - Silvery metal shell
SN3	A3	XMN23-006314.003	FNI IOL-106-006-K20 - White adhesive plastic sheet w/ black printing
SN4	A4	XMN23-006314.004	FNI IOL-106-006-K20 - Green plastic shell
SN5	A5	XMN23-006314.005	FNI IOL-106-006-K20 - Silvery adhesive plastic label w/ black printing
SN6	A6	XMN23-006314.006	FNI IOL-106-006-K20 - Black glue
SN7	A7	XMN23-006314.007	FNI IOL-106-006-K20 - Black plastic shell
SN8	A8	XMN23-006314.008	FNI IOL-106-006-K20 - Silvery metal screw
SN9	A9	XMN23-006314.009	FNI IOL-106-006-K20 - Golden metal pin
SN10	A10	XMN23-006314.010	FNI IOL-106-006-K20 - Green plastic housing
SN11	A11	XMN23-006314.011	FNI IOL-106-006-K20 - Silvery metal pin
SN12	A12	XMN23-006314.012	FNI IOL-106-006-K20 - Green plastic cover
SN13	A13	XMN23-006314.013	FNI IOL-106-006-K20 - Green plastic shell
SN14	A14	XMN23-006314.014	FNI IOL-106-006-K20 - Silvery metal part
SN15	A15	XMN23-006314.015	FNI IOL-106-006-K20 - Orange plastic part
SN16	A16	XMN23-006314.016	FNI IOL-106-006-K20 - Green "PCB"
SN17	A17	XMN23-006314.017	FNI IOL-106-006-K20 - Silvery metal solder
SN18	A18	XMN23-006314.018	FNI IOL-106-006-K20 - Black body (small)
SN19	A19	XMN23-006314.019	FNI IOL-106-006-K20 - Black body (big)



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

**Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com**

SGS-CSTC Standards Technical Services Co., Ltd. Xiamen Branch  
 Xiamen Branch Testing Center-Chemical Laboratory  
 No. 31 Xianghong Road, Xiang' An Torch Industrial Zone, Xiamen, Fujian Province, China 361101 t (86-592) 5766995 f (86-592) 5766999 www.sgsgroup.com.cn  
 中国·福建·厦门市火炬(翔安)产业区翔虹路31号 邮编: 361101 t (86-592) 5766995 f (86-592) 5766999 e sgs.china@sgs.com

SN ID	Sample No	SGS Sample ID	Description
SN20	A20	XMN23-006314.020	FNI IOL-106-006-K20 - Black body (medium)
SN21	A21	XMN23-006314.021	FNI IOL-106-006-K20 - Black body w/ orange printing
SN22	A22	XMN23-006314.022	FNI IOL-106-006-K20 - Black body w/ white printing
SN23	A23	XMN23-006314.023	FNI IOL-106-006-K20 - Black body (small)
SN24	A24	XMN23-006314.024	FNI IOL-106-006-K20 - Black body (big)
SN25	A25	XMN23-006314.025	FNI IOL-106-006-K20 - Orange body
SN26	A26	XMN23-006314.026	FNI IOL-106-006-K20 - Brown body
SN27	A27	XMN23-006314.027	FNI IOL-106-006-K20 - Grey body
SN28	A28	XMN23-006314.028	FNI IOL-106-006-K20 - Black body
SN29	A29	XMN23-006314.029	FNI ECT-106-104-K54 - Grey plastic shell w/ black printing
SN30	A30	XMN23-006314.030	FNI ECT-106-104-K54 - Transparent plastic sheet
SN31	A31	XMN23-006314.031	FNI ECT-106-104-K54 - Black plastic cap
SN32	A32	XMN23-006314.032	FNI ECT-106-104-K54 - Transparent plastic cap
SN33	A33	XMN23-006314.033	FNI ECT-106-104-K54 - Black surfaced metal shell
SN34	A34	XMN23-006314.034	FNI ECT-106-104-K54 - Black surfaced metal part
SN35	A35	XMN23-006314.035	FNI ECT-106-104-K54 - White plastic part
SN36	A36	XMN23-006314.036	FNI ECT-106-104-K54 - Black soft plastic gasket
SN37	A37	XMN23-006314.037	FNI ECT-106-104-K54 - Green soft plastic gasket
SN38	A38	XMN23-006314.038	FNI ECT-106-104-K54 - Transparent plastic part



Verification Results :

Unless otherwise specified, the unit is mg/kg.

Test Item(s)	A1	A2	A3	A4	A5	A6	A7	A8
Pb	BL	<40000▲	BL	BL	BL	BL	BL	BL
Cd	BL							
Hg	BL							
Cr(VI)▼	BL							
PBBs	BL	---	BL	BL	BL	BL	ND	---
PBDEs	BL	---	BL	BL	BL	BL	ND	---
DBP	BL	---	ND	BL	<600 *	ND	BL	---
BBP	BL	---	ND	BL	<600 *	ND	BL	---
DEHP	BL	---	ND	BL	<600 *	ND	BL	---
DIBP	BL	---	ND	BL	<600 *	ND	BL	---
<b>Conclusion</b>	<b>PASS</b>							

Test Item(s)	A9	A10	A11	A12	A13	A14	A15	A16
Pb	27324▲	BL						
Cd	BL							
Hg	ND	BL						
Cr(VI)▼	BL	BL	BL	BL	BL	ND	BL	BL
PBBs	---	BL	---	BL	BL	---	ND	ND
PBDEs	---	BL	---	BL	BL	---	ND	ND
DBP	---	BL	---	BL	BL	---	ND	BL
BBP	---	BL	---	BL	BL	---	ND	BL
DEHP	---	BL	---	BL	BL	---	ND	BL
DIBP	---	BL	---	BL	BL	---	ND	BL
<b>Conclusion</b>	<b>PASS</b>							

Test Item(s)	A17	A18	A19	A20	A21	A22	A23	A24
Pb	BL							
Cd	ND	BL						
Hg	BL							
Cr(VI)▼	BL							
PBBs	---	BL	BL	BL	BL	ND	BL	BL



Test Item(s)	A17	A18	A19	A20	A21	A22	A23	A24
PBDEs	---	BL	BL	BL	BL	ND	BL	BL
DBP	---	ND						
BBP	---	ND						
DEHP	---	ND						
DIBP	---	ND						
<b>Conclusion</b>	<b>PASS</b>							

Test Item(s)	A25	A26	A27	A28	A29	A30	A31	A32
Pb	BL							
Cd	BL	BL	BL	BL	BL	BL	35	BL
Hg	BL							
Cr(VI)▼	BL							
PBBs	BL	ND	BL	BL	BL	BL	ND	BL
PBDEs	BL	ND	BL	BL	BL	BL	ND	BL
DBP	ND	ND	ND	ND	BL	BL	ND	ND
BBP	ND	ND	ND	ND	BL	BL	ND	ND
DEHP	ND	ND	ND	ND	BL	BL	ND	ND
DIBP	ND	ND	ND	ND	BL	BL	ND	ND
<b>Conclusion</b>	<b>PASS</b>							

Test Item(s)	A33	A34	A35	A36	A37	A38
Pb	BL	BL	BL	BL	BL	BL
Cd	BL	BL	BL	BL	BL	BL
Hg	BL	BL	BL	BL	BL	BL
Cr(VI)▼	BL	BL	BL	BL	BL	BL
PBBs	---	---	BL	BL	BL	BL
PBDEs	---	---	BL	BL	BL	BL
DBP	---	---	BL	ND	ND	ND
BBP	---	---	BL	ND	ND	ND
DEHP	---	---	BL	ND	ND	ND
DIBP	---	---	BL	ND	ND	ND
<b>Conclusion</b>	<b>PASS</b>	<b>PASS</b>	<b>PASS</b>	<b>PASS</b>	<b>PASS</b>	<b>PASS</b>



**Notes:**

- (1) Interpretation of screening results by X-ray fluorescence spectrometry (XRF):
  - (a) Screening limits in mg/kg for regulated elements in various matrices according to IEC 62321-1:2013 Annex A as below table.

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	Not applicable	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

- (b) If the maximum allowed level restricts PBB/PBDE and Cr(VI) rather than Br and Cr, the exceptions are the XRF determinations of Br and Cr. If the quantitative results for the elements Br and/or are higher than the limit (for Br calculated based on the stoichiometry of Br in the most common congeners of PBB/PBDE), the sample is “inconclusive”.
  - (c) Results are obtained by EDXRF for primary screening, LOD = Limit of Detection, BL = Below Limit, OL = Over Limit, IN (The symbol X marks the region)= Inconclusive, where further investigation is necessary, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs/PBDEs) are recommended to be performed.
  - (d) The EDXRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.
- (2) Screening results of Phthalates (PHTH) are for primary screening, and further chemical testing by GC-MS (for DBP, BBP, DEHP and DIBP) are recommended to be performed if the concentration exceeds the below warning value (unit: mg/kg)

Test Items	CAS No.	Polymer/ Composite Materials
Dibutyl Phthalate (DBP)	84-74-2	$BL \leq 600 < X$
Benzylbutyl Phthalate (BBP)	85-68-7	$BL \leq 600 < X$
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	$BL \leq 600 < X$
Diisobutyl Phthalate (DIBP)	84-69-5	$BL \leq 600 < X$

- (3) Interpretation of results by chemical tests:
  - (a) mg/kg = 0.0001%, MDL=Method detection Limit, ND = Not Detected (<MDL), --- = Not Applicable.



(b) Unit and MDL in wet chemical test

Test Items	Pb	Cd	Hg	DBP	BBP	DEHP	DIBP
Unit	mg/kg						
MDL	10	10	10	100	100	100	100

The MDL for single compound of PBBs and PBDEs is 100 mg/kg.

MDL of Cr(VI) for polymer, composite and leather sample is 10 mg/kg.

MDL of Cr(VI) for metal sample is 0.10µg/cm<sup>2</sup>.

(c) ▼ =Metal sample

- a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13µg/cm<sup>2</sup>.  
The sample coating is considered to contain Cr(VI)
- b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10µg/cm<sup>2</sup>).  
The coating is considered a non-Cr(VI) based coating
- c. The result between 0.10µg/cm<sup>2</sup> and 0.13µg/cm<sup>2</sup> is considered to be inconclusive -  
unavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

(4) Restricted substances and maximum concentration values tolerated by weight in homogeneous materials under RoHS Directive: Cd: 0.01%, Pb/Hg/Cr(VI)/PBBs/PBDEs/DEHP/DBP/BBP/DIBP: 0.1%. The limit is quoted from RoHS Directive (EU) 2015/863.

(5) IEC 62321 series is equivalent to EN 62321 series.

(6) \* = Considering insufficient sample amount, the Method Detection Limit (MDL) is raised appropriately.

(7) According to the declaration from applicant, the materials of other parts in Models " FNI ECT-106-104-K54" are the same as those in Model " FNI IOL-106-006-K20", and the results of Model " FNI IOL-106-006-K20" for support the results of other parts in Models " FNI ECT-106-104-K54". The applicant will take the responsibility of all discrepancy and risk.

(8) ▲=According to the declaration from the client, Lead (Pb) in No.A2 and No.A9 is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 6(c)]: Copper alloy containing up to 4 % lead by weight.

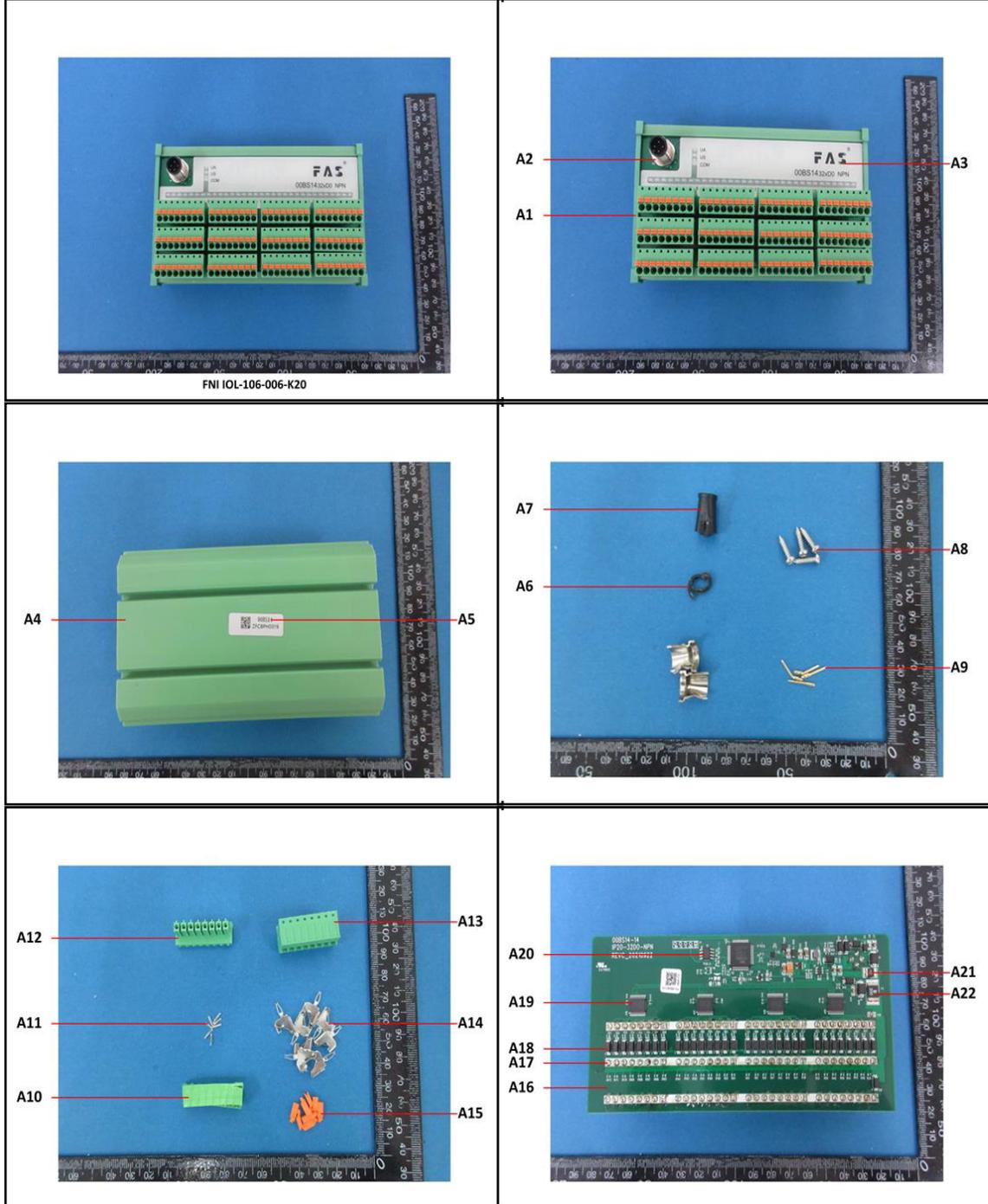
Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (  $w=0$ ) stated in ILAC-G8:09/2019.

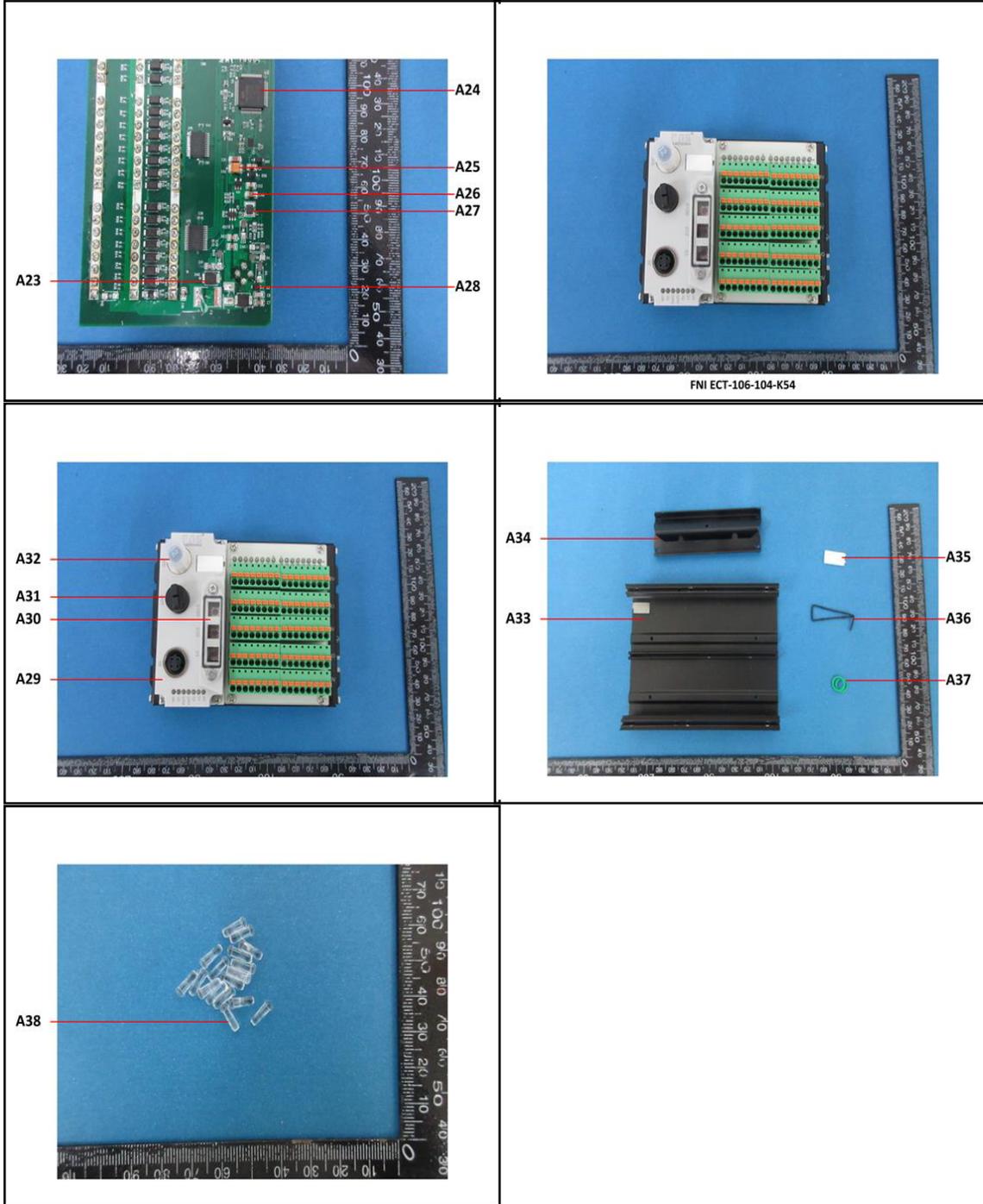


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)  
 No. 31 Xianghong Road, Xiang' An Torch Industrial Zone, Xiamen, Fujian Province, China 361101 t (86-592) 5766995 f (86-592) 5766999 www.sgs.com.cn  
 中国·福建·厦门市火炬(翔安)产业区翔虹路31号 邮编: 361101 t (86-592) 5766995 f (86-592) 5766999 e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

Sample photo:





SGS authenticate the photo on original report only

\*\*\* End of Report \*\*\*

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

No. 31 Xianghong Road, Xiang' An Torch Industrial Zone, Xiamen, Fujian Province, China 361101 t (86-592) 5766995 f (86-592) 5766999 www.sgs.com.cn  
 中国·福建·厦门市火炬(翔安)产业区翔虹路31号 邮编: 361101 t (86-592) 5766995 f (86-592) 5766999 e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

