

Test Report

號碼(No.): CE/2020/52547 日期(Date): 2020/05/22 頁數(Page): 1 of 14

鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號

NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):

送樣廠商(Sample Submitted By) 鴻星電子股份有限公司 (HOSONIC ELECTRONIC CO., LTD.) SMD CRYSTAL SERIES AND SMD CRYSTAL OSCILLATOR SERIES 樣品名稱(Sample Description) 樣品型號(Style/Item No.) SEAM SEALING CRYSTAL AND SMD OSC/VCXO/PECL/LVDS

收件日期(Sample Receiving Date) 2020/05/15

測試期間(Testing Period) 2020/05/15 to 2020/05/22

測試結果(Test Results) : 請參閱下一頁 (Please refer to following pages).





PIN CODE: 5F157A2F

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html. Attention is drawn to the limits of lient's instruction is drawn to the time of its intervention only and within the limits of client's instruction, 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.



號碼(No.): CE/2020/52547 日期(Date): 2020/05/22 頁數(Page): 2 of 14

Test Report

鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號 NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

測試結果(Test Results)

測試部位(PART NAME)No.1 : 整體混測 (MIXED ALL PARTS)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result) No.1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321-5: 2013,以感應耦合 電漿發射光譜儀檢測. / With	2	n. d.
鉛 / Lead (Pb)	mg/kg	reference to IEC 62321-5: 2013 and performed by ICP-OES.	2	n. d.
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4:2013+ AMD1:2017, 以感應耦合電漿發射光譜儀檢測. / With reference to IEC 62321- 4:2013+ AMD1:2017 and performed by ICP-OES.	2	n. d.
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	参考IEC 62321-7-2: 2017,以UV-VIS 檢測. / With reference to IEC 62321-7-2: 2017 and performed by UV-VIS.	8	n. d.
多溴聯苯總和 / Sum of PBBs	mg/kg		_	n. d.
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n. d.
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n. d.
三溴聯苯 / Tribromobiphenyl	mg/kg	l	5	n. d.
四溴聯苯 / Tetrabromobiphenyl	mg/kg	參考IEC 62321-6: 2015,以氣相層析/	5	n. d.
五溴聯苯 / Pentabromobiphenyl	mg/kg	質譜儀檢測. / With reference to	5	n. d.
六溴聯苯 / Hexabromobiphenyl	mg/kg	- IEC 62321-6: 2015 and performed by - GC/MS.	5	n. d.
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n. d.
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n. d.
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n. d.
十溴聯苯 / Decabromobiphenyl	mg/kg] Γ	5	n. d.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html. Attention is drawn to the limits of initiality, 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 instruction, 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.



號碼(No.): CE/2020/52547 日期(Date): 2020/05/22 **Test Report**

頁數(Page): 3 of 14

鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號

NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result) No.1
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		_	n. d.
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg		5	n. d.
二溴聯苯醚 / Dibromodiphenyl ether	mg/kg	1	5	n. d.
三溴聯苯醚 / Tribromodiphenyl ether	mg/kg	1	5	n. d.
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg	參考IEC 62321-6: 2015,以氣相層析/	5	n. d.
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg	質譜儀檢測. / With reference to	5	n. d.
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg	IEC 62321-6: 2015 and performed by GC/MS.	5	n. d.
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg	UC/ MG.	5	n. d.
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg] [5	n. d.
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg]	5	n. d.
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg]	5	n. d.
鄰苯二甲酸二乙酯 / DEP (Di-ethyl phthalate) (CAS No.: 84-66-2)	mg/kg	参考IEC 62321-8: 2017,以氣相層析/質譜儀檢測. / With reference to IEC 62321-8: 2017. Analysis was performed by GC/MS.	50	n. d.
鄰苯二甲酸二甲酯 / DMP (Di-methyl phathalate) (CAS No.: 131-11-3)	mg/kg		50	n. d.
鄰苯二甲酸二異辛酯 / DIOP (Di-isooctyl phthalate) (CAS No.: 27554-26-3)	mg/kg		50	n. d.
鄰苯二甲酸二丙酯 / DPrP (Di-propyl phthalate) (CAS No.: 131-16-8)	mg/kg		50	n. d.
鄰苯二甲酸二環己酯 / DCHP (Di-cyclohexyl phthalate) (CAS No.: 84-61-7)	mg/kg		50	n. d.
鄰苯二甲酸二戊酯 / DNPP (Di-n-pentyl phthalate) (CAS No.: 131-18-0)	mg/kg		50	n. d.
鄰苯二甲酸二正己酯 / DNHP (Di-n-hexyl phthalate) (CAS No.: 84-75-3)	mg/kg		50	n. d.
鄰苯二甲酸二苯酯 / DPhP (Diphenyl phthalate) (CAS No.: 84-62-8)	mg/kg		50	n. d.



號碼(No.): CE/2020/52547 日期(Date): 2020/05/22 頁數(Page): 4 of 14 **Test Report**

鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號

NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result) No.1
鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg	參考IEC 62321-8: 2017,以氣相層析/質譜儀檢測. / With reference to IEC 62321-8: 2017. Analysis was performed by GC/MS.	50	n. d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg		50	n. d.
鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg		50	n. d.
鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg		50	n. d.
鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	mg/kg		50	n. d.
鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	mg/kg		50	n. d.
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	mg/kg		50	n. d.
六溴環十二烷及所有主要被辨別出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α – HBCDD, β – HBCDD, γ – HBCDD) (CAS No.: 25637–99–4 and 3194–55–6 (134237–51–7, 134237–50–6, 134237–52–8))	mg/kg	参考IEC 62321: 2008,以氣相層析/質 譜儀檢測. / With reference to IEC 62321: 2008. Analysis was performed by GC/MS.	5	n. d.
銻 / Antimony (Sb)	mg/kg	参考US EPA 3052: 1996,以感應耦合 電漿發射光譜儀檢測. / With reference to US EPA 3052: 1996. Analysis was performed by ICP-OES.	2	n. d.



頁數(Page): 5 of 14 號碼(No.): CE/2020/52547 日期(Date): 2020/05/22

Test Report

鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號

NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result) No.1
砷 / Arsenic (As)	mg/kg	参考US EPA 3052: 1996,以感應耦合 電漿發射光譜儀檢測. / With reference to US EPA 3052: 1996. Analysis was performed by ICP-OES.	2	n. d.
鈹 / Beryllium (Be)	mg/kg	参考US EPA 3052: 1996,以感應耦合 電漿發射光譜儀檢測. / With reference to US EPA 3052: 1996. Analysis was performed by ICP-OES.	2	n. d.
鹵素 / Halogen				
鹵素(氟)/ Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	参考BS EN 14582: 2016,以離子層析 儀分析. / With reference to BS EN 14582: 2016. Analysis was performed by IC.	50	n. d.
鹵素(氯)/ Halogen-Chlorine (C1) (CAS No.: 22537-15-1)	mg/kg		50	n. d.
鹵素(溴)/ Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg		50	n. d.
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n. d.
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	參考CEN/TS 15968: 2010,以液相層析/質譜儀檢測. / With reference to CEN/TS 15968: 2010. Analysis was performed by LC/MS.	0. 01	n. d.
全氟辛酸 / PFOA (CAS No.: 335-67-1)	mg/kg	参考CEN/TS 15968: 2010,以液相層析/質譜儀檢測. / With reference to CEN/TS 15968: 2010. Analysis was performed by LC/MS.	0. 01	n. d.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html. Attention is drawn to the limits of initiality, 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 instruction, 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.



Test Report

鴻星電子股份有限公司

號碼(No.): CE/2020/52547 日期(Date): 2020/05/22 頁數(Page): 6 of 14

HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號 NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. MDL = Method Detection Limit (方法偵測極限值)
- 3. n.d. = Not Detected (未檢出)
- 4. "-" = Not Regulated (無規格值)
- 5. 樣品的測試是基於申請人要求混合測試,報告中的混合測試結果不代表其中個別單一材質的含量. (The samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)

PFOS参考資訊(Reference Information): 持久性有機污染物 POPs - (EU) 2019/1021

PFOS濃度在物質或製備中不得超過0.001%(10ppm),在半成品、成品或零部件中不得超過0.1%(1000ppm),在紡織品或塗 層材料中不得超過1µg/m²。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above $1\mu g/m^2$.)

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html. 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 instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form 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.



Test Report

號碼(No.): CE/2020/52547 日期(Date): 2020/05/22 頁數(Page): 7 of 14

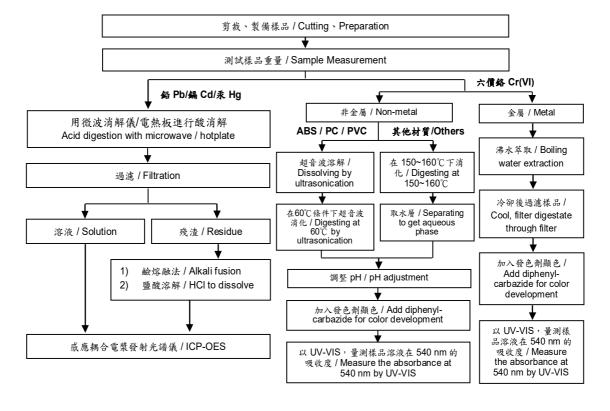
鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號

NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

重金屬流程圖 / Analytical flow chart of Heavy Metal

根據以下的流程圖之條件,樣品已完全溶解。(六價鉻測試方法除外)

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr6+ test method excluded)



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html. Attention is drawn to the limits of initiality, 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 instruction, 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.



Test Report

鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號 NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

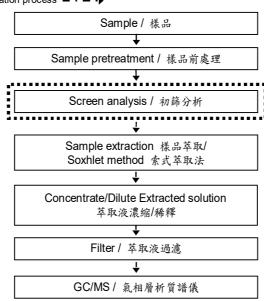
號碼(No.): CE/2020/52547

多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE

日期(Date): 2020/05/22

頁數(Page): 8 of 14

初次測試程序 / First testing process = 選擇性篩檢程序 / Optional screen process ■■■■ 確認程序 / Confirmation process - · - •▶





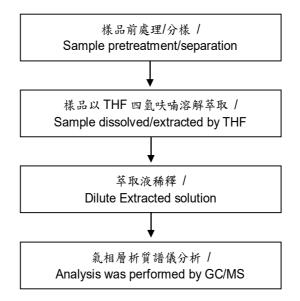
Test Report

號碼(No.): CE/2020/52547 日期(Date): 2020/05/22 頁數(Page): 9 of 14

鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號 NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】





Test Report

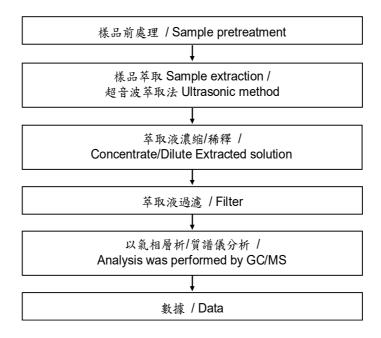
鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號 NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

號碼(No.): CE/2020/52547

六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD

日期(Date): 2020/05/22

頁數(Page): 10 of 14



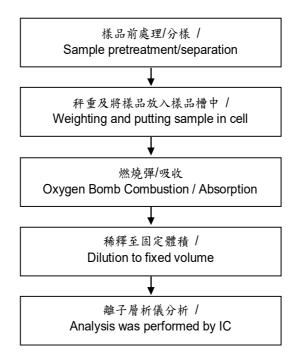


Test Report

日期(Date): 2020/05/22 號碼(No.): CE/2020/52547 頁數(Page): 11 of 14

鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號 NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

鹵素分析流程圖 / Analytical flow chart - Halogen





Test Report

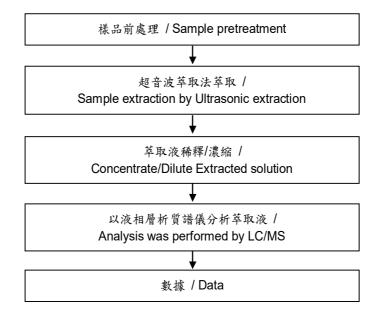
鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號 NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

號碼(No.): CE/2020/52547

全氟辛酸/全氟辛烷磺酸分析流程圖 / Analytical flow chart - PFOA/PFOS

日期(Date): 2020/05/22

頁數(Page): 12 of 14





Test Report

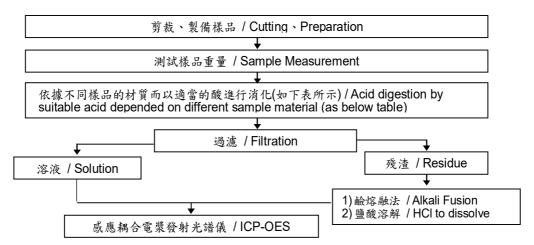
號碼(No.): CE/2020/52547 日期(Date): 2020/05/22 頁數(Page): 13 of 14

鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號

NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

元素以 ICP-OES 分析的消化流程圖 (Flow Chart of digestion for the elements analysis performed by ICP-OES)

根據以下的流程圖之條件,樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 /
	Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
玻璃 / Glass	硝酸,氫氟酸 / HNO ₃ /HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO ₃
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCI
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate
	reagent to total digestion



Test Report

鴻星電子股份有限公司 HOSONIC ELECTRONIC CO., LTD. 新北市樹林區俊英街84巷23-1號 NO. 23-1, LN. 84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 238, TAIWAN

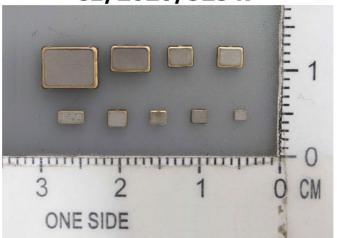
號碼(No.): CE/2020/52547

* 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. * (The tested sample / part is marked by an arrow if it's shown on the photo.)

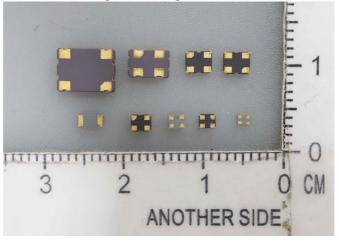
日期(Date): 2020/05/22

頁數(Page): 14 of 14

CE/2020/52547



CE/2020/52547



** 報告結尾 (End of Report) **