

Specification For Approval

Date: 2019 / 04 / 12

File No.: 190412004

Version: 1.0

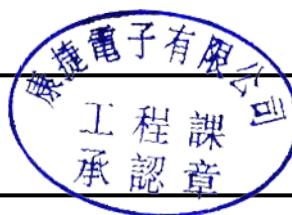
Customer : 碩天科技股份有限公司

Customer P/N : WS9-0000022-00

INVAX P/N : AN2400-39A14BBF

Description : Antenna

單重(天線加扣環) 5g



Cortec Checked By:



Customer Approved By:



INVAX System Technology Corp.
4F. No. 815.Chung Hsiao East Rd.,Sec.5
Taipei, TAIWAN

TEL:886-2-2788-5218 FAX:886-2-2783-1658
<http://www.invaxsystem.com>



Cortec Technology Inc.
Xian-Xi Industrial, Sha-Tou Administration Zone,
Chang-An Town, Dong-Guan City, Guangdong
Province, China
TEL:86-769-85388261 FAX:86-769-85317869
<http://www.cortec.com.cn>

Index:

- 1. Revision History / Page 3**
- 2. Specification / Page 4**
- 3. Characteristics and Reliability Test / Page 5**
- 4. Antenna - S Parameter Test Data / Page 6**
- 5. Antenna - Radiation Pattern Test Data / Page 7**
- 6. Mechanical and Packing Drawing / Page 8 ~ 9**
- 7. Material Description and RoHS Test Report / Page 10 ~ end**

Product Number: AN2400-39A14BBF

Product Name: Antenna



1. Revision History

Revision	Date	Change Notification	Description
1.0	2019.04.12	初版	

Product Number: AN2400-39A14BBF

Product Name: Antenna



2. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz
V.S.W.R.	≤ 2.0
Peak Gain	2.74 dBi
Radiation Pattern	Omni-Directional
Max Input Power	≥ 2 W
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Material of Plastic	ABS
Cable Type	OD1.13mm
Connector Type	Mini Connector
C. Environmental	
Operation Temperature	- 40 °C ~ + 80 °C
Storage Temperature	- 40 °C ~ + 80 °C
Antenna Color Storage life	< 2 year

Product Number: AN2400-39A14BBF

Product Name: Antenna



3. Characteristics and Reliability Test

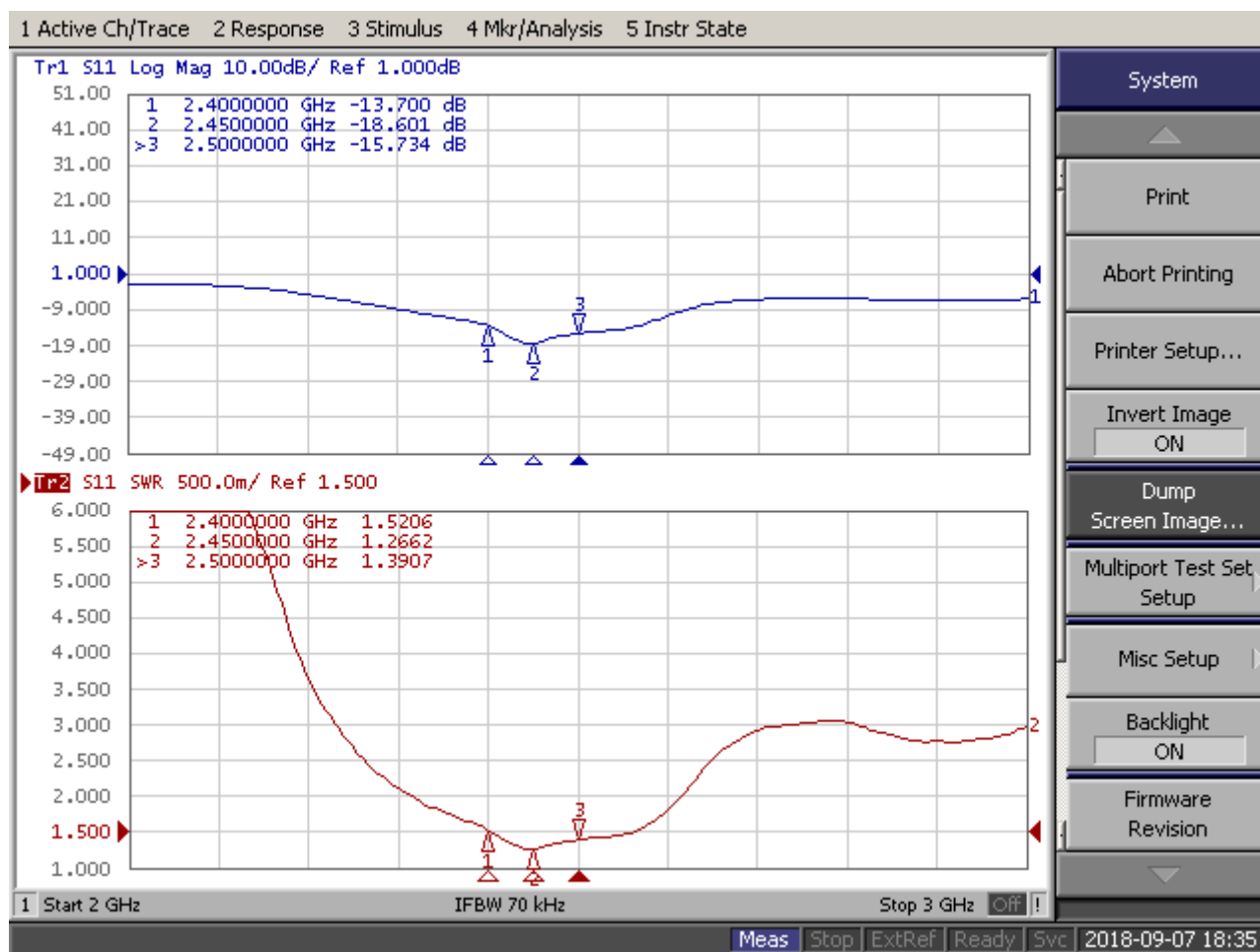
Test Items 測試項目		Test Condition and Procedure 測試方法	Requirements 要求	Result 結果
C1	V.S.W.R. 電壓駐波比	Set DUT on Network Analyzer; make individual calibration to test 設置網路分析儀參數進行測試	Directive DUT specification 符合待測物規範	PASS
C3	Antenna Gain 天線增益	Set DUT on Antenna Chamber; make individual calibration to test 設置天線暗室參數進行測試	Directive DUT specification 符合待測物規範	PASS
M1	Vibration 震動	GB / T2423.48-2008 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz 3 directions; 2 hours for each direction 振幅 1.5mm ; 頻率 20~80~20Hz ; 3 個方向各 2H	1. No Visual Damage 2. Frequency Tol.≤5% 無明顯外觀不良;頻率偏移≤5%	PASS
M2	Random Drop 跌落	GB / T2423.8-1995 Single : Height: 1.0 Meter; 3 directions; 1 time for each direction 單支天線, 高 1m ; 3 個方向各 1 次	1. No parts separated 、 fracture 2. Frequency Tol.≤5% 產品無脫落、斷裂;頻率偏移≤5%	PASS
M4	Pull Test 拉力	Holding with individual specification; force applied to axis of terminal .單獨定義產品端子拉力	1. Directive DUT specification 2. Frequency Tol.≤5% 符合待測物規範;頻率偏移≤5%	PASS
M6	Dimension 尺寸	Inspection of dimension, color, material, package, surface process.检查尺寸,颜色,材料,包装,表面處理	Directive DUT specification 符合待測物規範	PASS
E2	Salt Spray 鹽霧	GB / T 2423.17-2008 Temp: 35°C; RH: ≥ 95%; NaCl solution: ≥ 5%;Time: 24H 溫度 35°C ; 濕度≥95%;鹽水濃度≥5% ; 測試 24H	1. No Visual Damage 2. Frequency Tol.≤5% 無明顯外觀不良;頻率偏移≤5%	PASS
E3	Temperature and Humidity Chamber 恒溫恒濕	GB / T 2423.3-2006 Temp: 80°C / 12 H; -40°C / 12H RH: ≥ 90%; Time: 24H 溫度 80°C 測試 12H 轉-40°C 測試 12H; 濕度≥ 90% ; 時間 24H	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5% 恢復 2H 后, 無明顯外觀不良;頻率偏移≤5%	PASS
E5	Aging test 老化	GB / T 2423.2 - 2008 Temp: 80°C; Time: 24 hours 溫度 80°C , 測試 24H	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5% 無明顯外觀不良;頻率偏移≤5%	PASS
R1	RoHS	With Reference to IEC 62321:2008 with flow chart 參考 IEC 62321 測試流程	Directive RoHS 2011/65/EU 符合 RoHS 2011/65/EU 標準	PASS

Product Number: AN2400-39A14BBF

Product Name: Antenna



3. Antenna - S Parameter Test Data

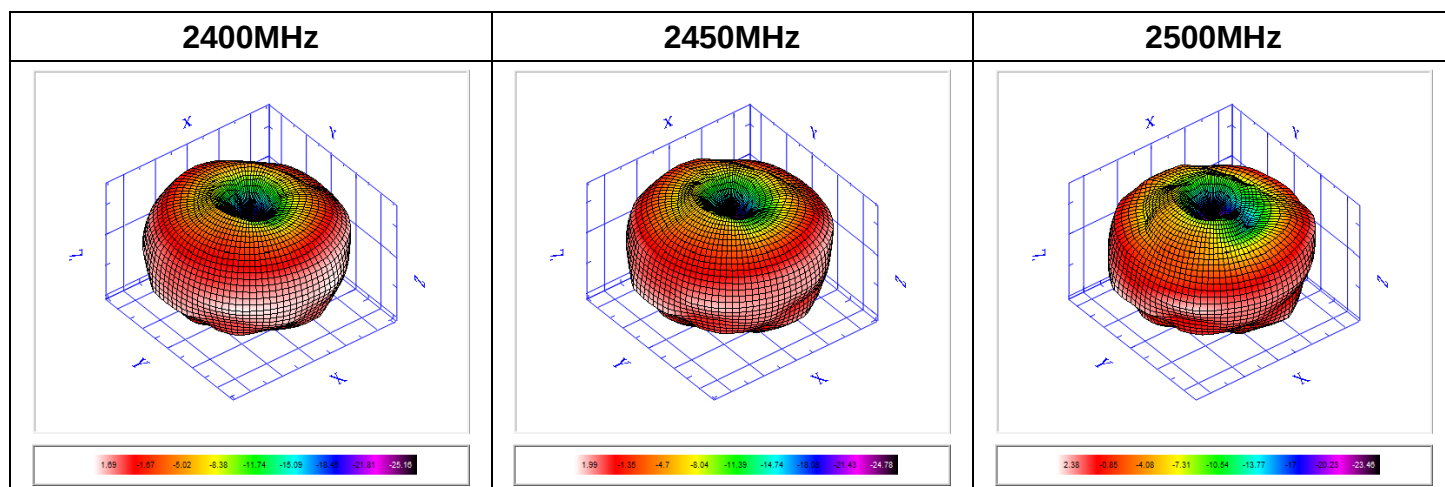


Product Number: AN2400-39A14BBF

Product Name: Antenna



4. Antenna - Radiation Pattern Test Data



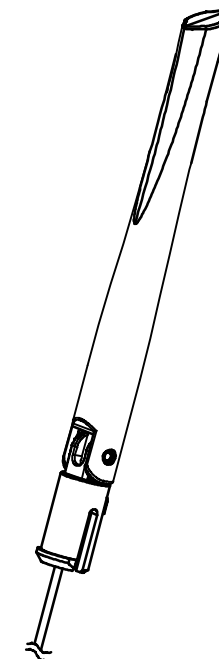
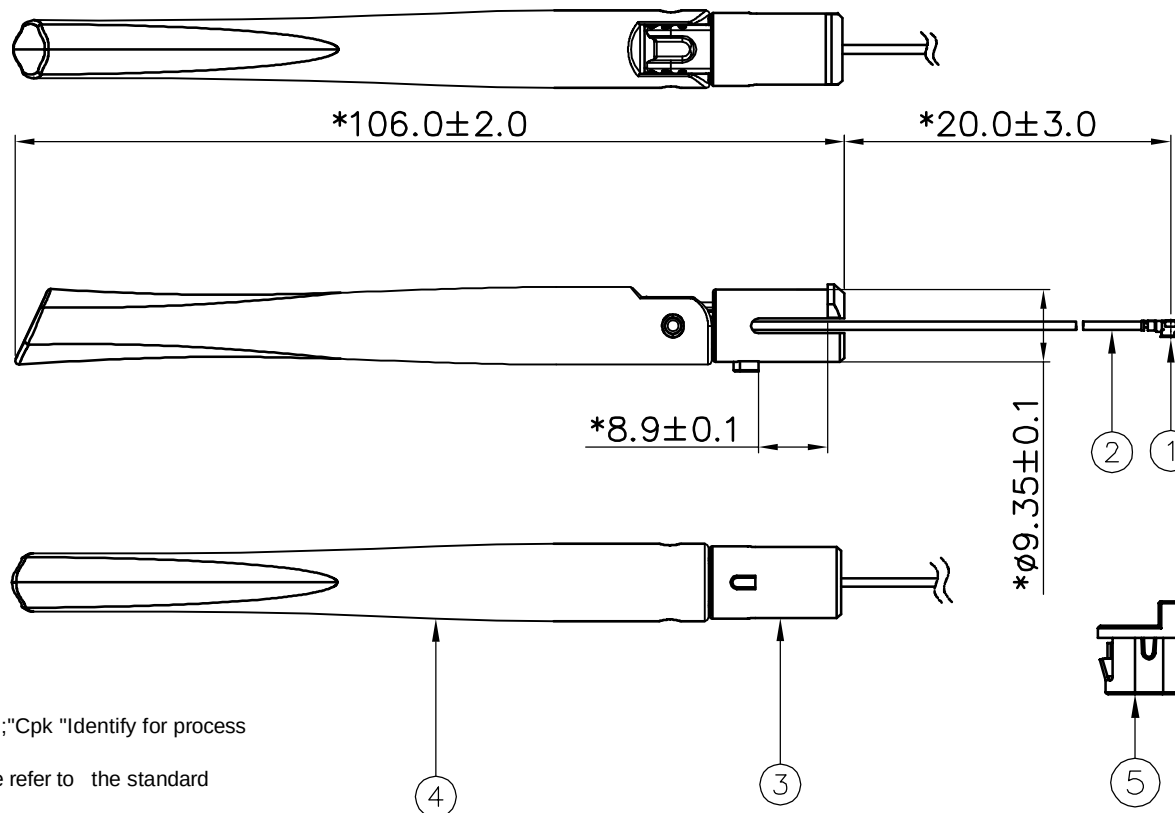
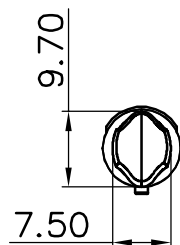
Frequency	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
E-Total Peak Gain (dBi)	1.69	1.63	1.92	1.93	1.78	1.99	2.16	2.09	2.74	2.46	2.38
Efficiency (%)	74.49	73.3	78.11	78.13	76.37	74.28	73.34	73.65	78.36	73.15	73.91
Average Gain (dB)	-1.28	-1.35	-1.07	-1.07	-1.17	-1.29	-1.35	-1.33	-1.06	-1.36	-1.31

RoHS

Compatible



SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



Note:

- 1.Mark * is important dimension ;"Cpk "Identify for process control (CpK $\geq$ 1.33).
- 2.Tolerance:Unmarked tolerance refer to the standard tolerance please.
- 3.Pay attention to the direction of the connector.

5	R-AN07-05-POM	Holder	POM	Black	1
4	BODY-AN39-01B-P	Body	POM	Black	1
3	BASE-AN39-01B-A	Base	ABS	Black	1
2	R-CB-113BS	Cable	OD1.13	Black	1
1	CR-113	Mini connctor	Cu	Au Plating	1
No.	Part Number	Name	Material	Finish	Q'ty

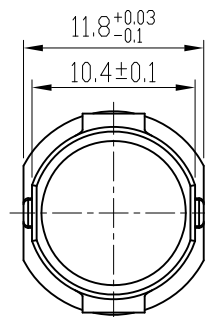
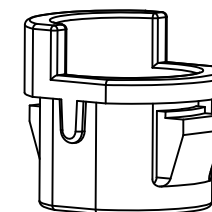
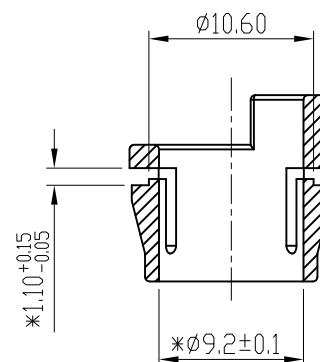
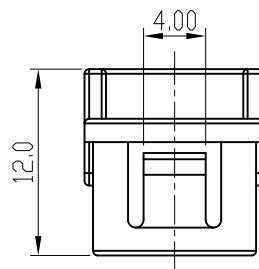
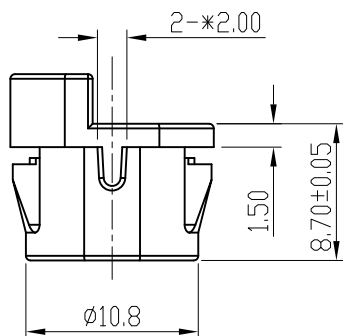
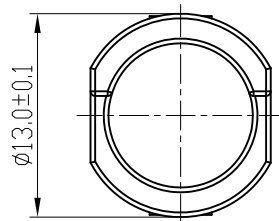
Invax System Group.			Cortec Technology Inc.			
Cortec			Http://www.invaxsystem.com E-mail: info@invax.com.tw		Tel: 886-2-27885218 Fax: 886-2-27831658	
TITLE: 2.4GHz 2dBi Antenna						
PART NO.: AN2400-39A14BBF			CUSTOMER P/N: /			
APP BY	CHK BY	RF BY	DES BY		Tolerance	
Grant	Kenny	SF	LJF		UNITS: mm	X.X ±0.5
2019/04/03	2019/04/03	2019/04/03	2019/04/03		SCALE: 1/1	X.XX ±0.2
					REVISION: A	X° ±1

RoHS

Compatible



SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



備注:

- 1.材質: POM
- 2.表面處理: 黑色
- 3.尺寸: 帶*為重點管控尺寸;帶CpK尺寸需做制程能力管控(≥ 1.33)
- 4.粗糙度: 未注粗糙度按 $\sqrt{16}$
- 5.未標注尺寸公差, 請參照標準公差.
- 6.孔及相關配合尺寸以實配為準(實配件).
- 7.環境等檢驗請參照《天線檢驗標準》及《承認書》.

Invax System Group.			Cortec Technology Inc.		
Cortec			Http://www.invaxsystem.com E-mail:info@invax.com.tw		Tel :886-2-27885218 Fax:886-2-27831658
TITLE: Plastic Holder					
PART NO.: R-AN07-05-POM			CUSTOMER P/N: /		
APP BY	CHK BY	RF BY	DES BY		Tolerance
Grant	Kenny		LJHUA	UNITS: mm	X.X ±0.2
2015.10.12	2015.10.12		2015.10.12	SCALE: 1/1	X.XX ±0.1
			REVISION: A	X° ±1	

Date : 2019/04/03

Page : 1 of 1

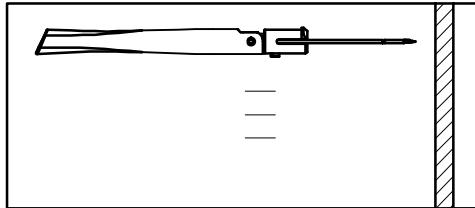
Part Number : AN2400-39A14BBF

Revision : A

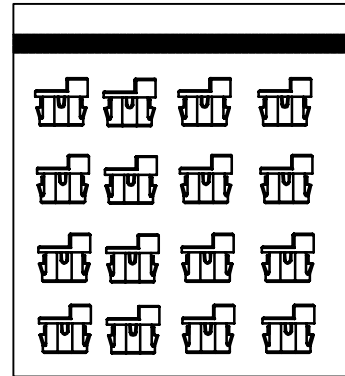
Name: ANTENNA-2.4GHz-2dBi

Customer : ALL

一. WITH THE ANT INTO THE PE BAG

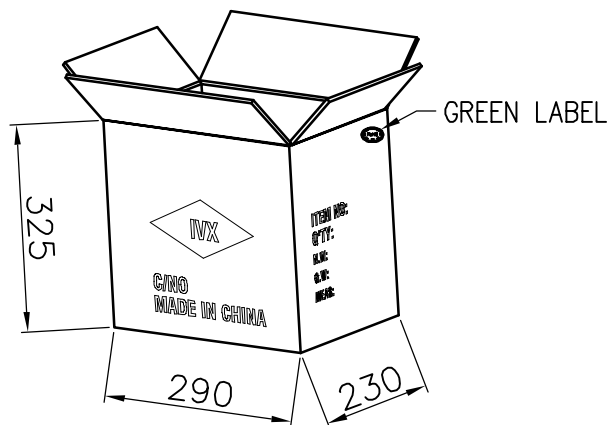


10 PCS/PE BAG
R-PE-BAG-80180



1000PCS/PE BAG
R-PE-BAG-350440

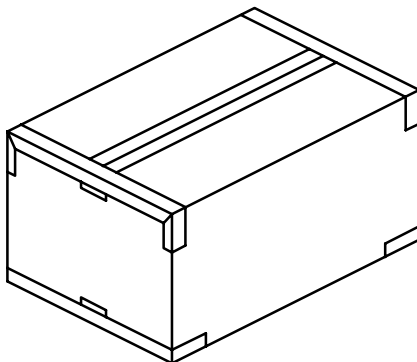
二. PACKING



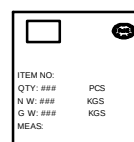
1000PCS / CARTON

R-OTT-C-2923325

三. SEALING



SIDE



FRONT



UNITS: mm

APPROVED BY : GrantCHECKED BY : KennyDESIGNED BY : LJF

SGS 台灣網站 → http://twap.sgs.com/sgsrsts/chn/cheres_tw.asp
 SGS 大陸網站 → http://rsts.cn.sgs.com/chn/cheres_cn.asp
 SGS 韓國網站 → http://rohs.kr.sgs.com/sgsrsts/en/cheres_en.asp

COR/F-G-47a

請輸入以下報告正確資料及檢查碼以便查核

1. 報告編號
2. 報告日期 (YYYY/MM/DD)
3. 產品名稱 (輸入前 10 個字不含空白)
4. 圖示檢查碼 (依指示畫面)



物料中HSF對象物質含量調查表

康捷電子有限公司	
填表：	時麗
部門：	研發部
職務：	文員

物料名稱：AN2400-39A14BBF

序號	物料型號	物料各構成名稱	各構成物料的材质	測試報告裡RoHS2.0對應物質測試結果										檢測報告編號	測試日期	測試名稱	測試機構名稱
				Cd	Pb	Hg	Cr(VI)	PBBs	PBDEs	DBP	BBP	DIBP	DEHP				
1	BODY-AN39-01B-P R-AN07-05-POM	Body	POM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANML1808483301	2018.05.10	聚甲醛	SGS
2	BASE-AN39-01B-A	Base	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0114084381d5001	2018.11.29	POLYLAC® PA-757	TuvRheinland
3	R-CB-113BS	Cable	黑色色母	N.D.	13	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC1819717301	2018.09.29	FEP环保彩色料.	SGS
			FEP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	NGBML1900152502	2019.01.16	聚全氟乙丙烯树脂	SGS
			鍍錫銅	N.D.	11	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	A2180042511101001C	2018.04.10	镀锡圆铜线	CTI
4	CR-113	MINI CONN	PBT	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	KA201850624	2018.05.22	PBT	SGS
			銅	N.D.	12	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC1900319410	2019.01.11	C5210 (QSn8-0.3).	SGS
			鍍金層	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	A2180247064101001C	2018.12.18	金镀层	CTI
5	/	TUBE	铜	N.D.	23	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC1900437904	2019.01.11	黄铜带.	SGS

根據測試報告如實填寫鉛、鎘、汞、六價鉻、PBBs和PBDEs六項禁用物質的含量

包裝材料中鉛、鎘、汞、六價鉻總含量不超過100ppm，鎘的允許濃度為5ppm

歐盟ROHS指令豁免條款2009/95/BC、鋼中合金元素中的鉛含量達0.35%、鋁含量達0.4%、銅合金中的鉛含量達4%