

Specification For Approval

Date: 2024 / 11 / 13

File No.: 241113002

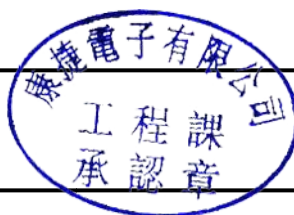
Version: 1.0

Customer : 磐旭智能股份有限公司

Customer P/N : 6701007001048M

INVAX P/N : NB1597-A235GF

Description : Antenna



Cortec Checked By:	RD 2024.11.13 SF
Customer Approved By:	



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1. Revision History

Revision	Date	Change Notification	Description
1.0	2024.11.13	初版	

Product Number: NB1597-A235GF

Product Name: Antenna



2. Specification

Sample Photo	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz 5150 ~ 5850 MHz
V.S.W.R.	≤ 8.0 @ 2400 ~ 2500 MHz ≤ 6.0 @ 5150 ~ 5850 MHz
Peak Gain	-1.31 dBi @ 2400 ~ 2500 MHz 3.19 dBi @ 5150 ~ 5850 MHz
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	FPC
Cable Type	OD1.13mm
Connector Type	Mini Connector
Pull Test of Connector	≥ 1.0 Kg
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C

Product Number: NB1597-A235GF

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
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
M3	Solderability 可焊性	GB / T2423.28-2005 Temp: 260±5° C;Duration: 5 seconds 溫度 260±5° C;持續 5 秒	Tin evenly on full 上錫均勻飽滿	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%	N/A
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%	N/A
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
E4	Thermal Shock 冷熱衝擊	GB / T 2423.22 - 2008 - 40°C (30 minutes) to + 80°C (30 minutes) ; Cycles: 24 - 40°C 測試 30 分轉 80°C 測試 30 分為一個週期; 共 24 週期	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

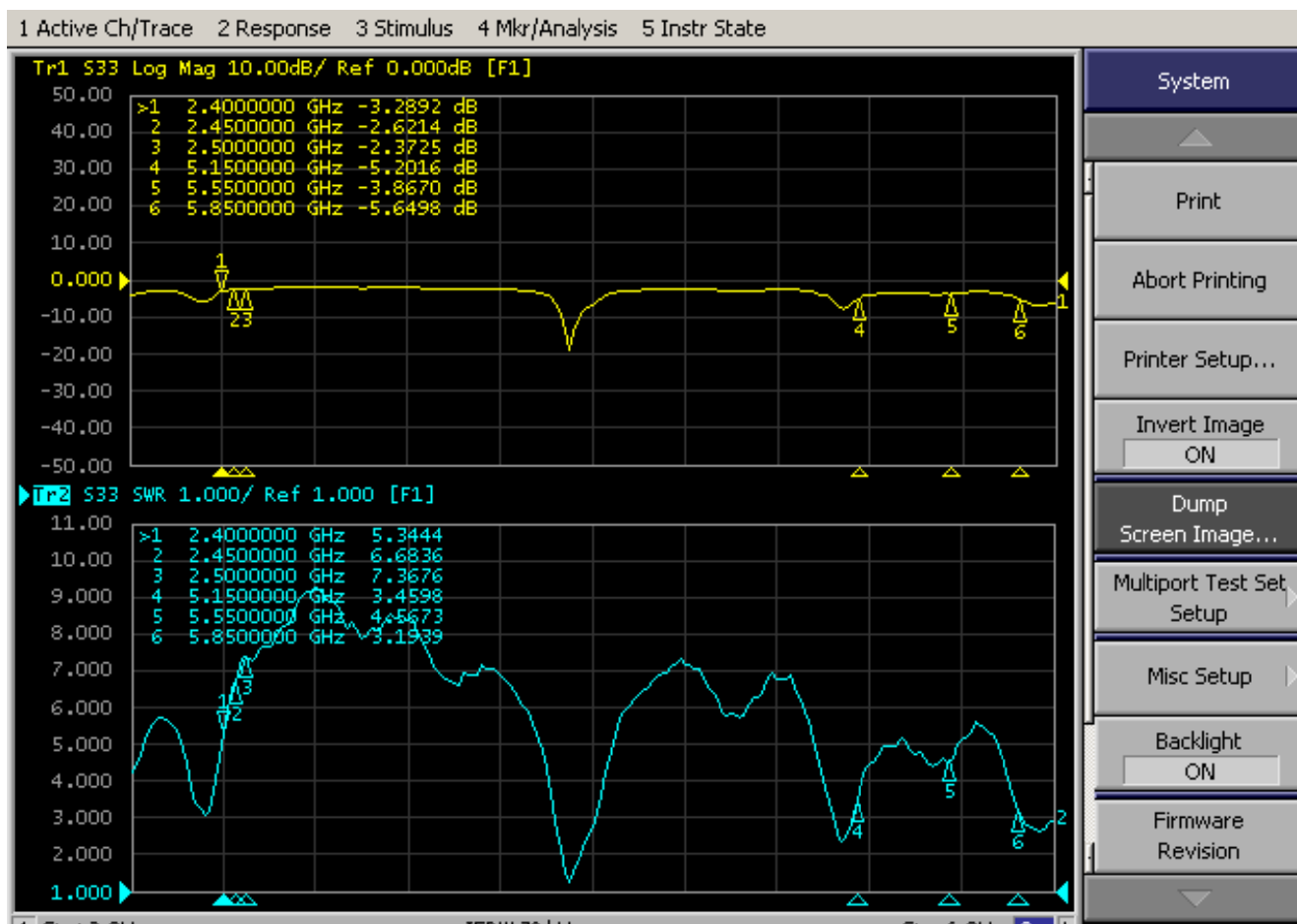
Product Number: NB1597-A235GF

Product Name: Antenna



4. Antenna - S Parameter Test Data

裸測



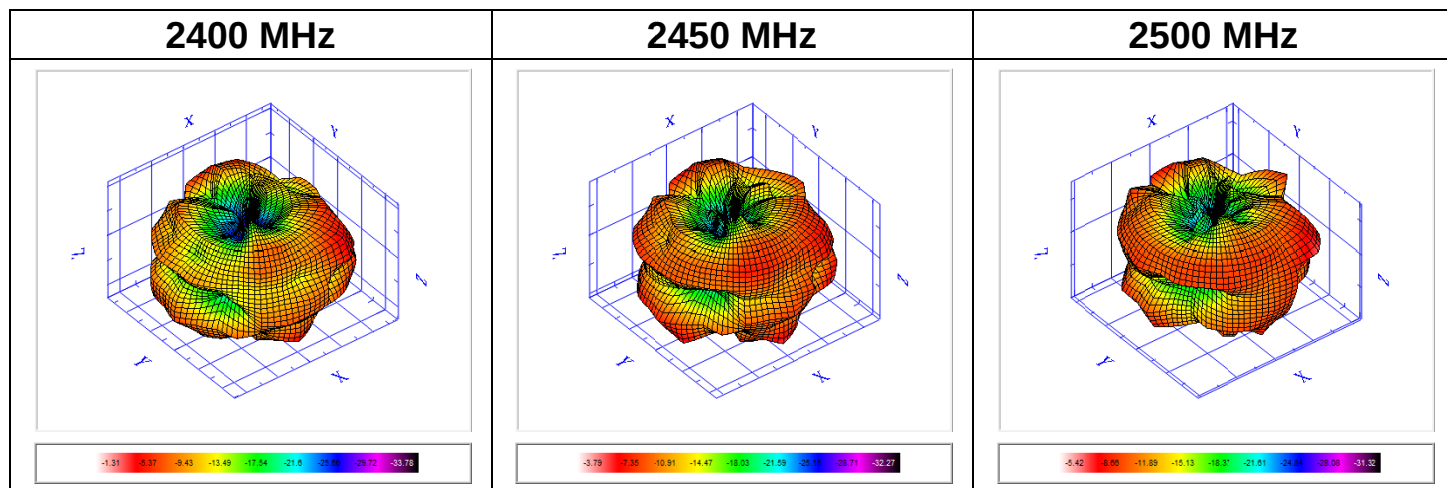
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Product Name: Antenna

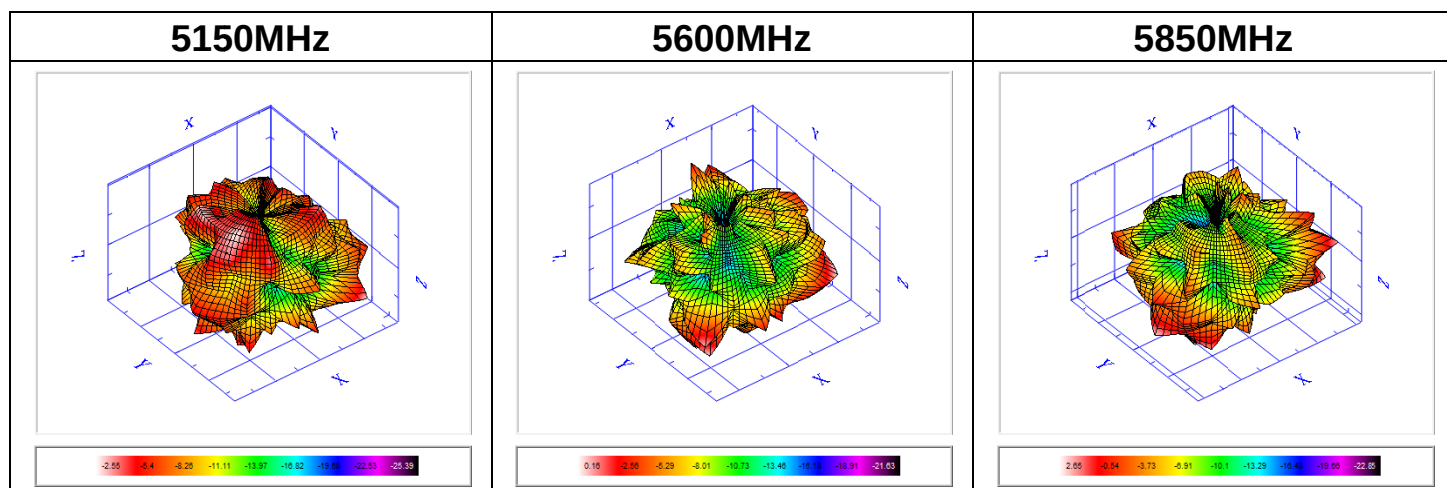


5. Antenna - Radiation Pattern Test Data

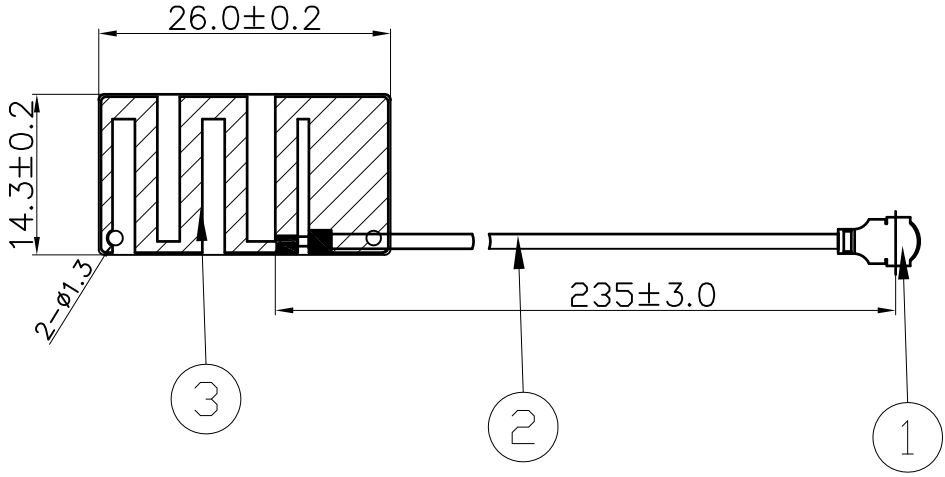
裸測



Frequency	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
E-Total Peak Gain (dBi)	-1.31	-2.54	-2.63	-2.75	-3.34	-3.79	-4.29	-4.52	-5.15	-5.71	-5.42
Efficiency (%)	13.79	12.1	11.26	11.05	10.09	9.36	8.94	8.64	8.13	7.32	6.48
Average Gain (dB)	-8.61	-9.17	-9.49	-9.57	-9.96	-10.29	-10.49	-10.63	-10.9	-11.36	-11.89



Frequency	5150	5180	5250	5350	5470	5580	5600	5700	5725	5745	5785	5800	5850
E-Total Peak Gain (dBi)	-2.55	-1.35	-2.51	-2.09	-0.03	1.68	0.16	1.32	0.78	3.19	2.55	2.55	2.65
Efficiency (%)	12.13	8.82	10.19	14.26	12.98	16.32	17.64	20.63	18.09	21.6	25.92	27.01	28.29
Average Gain (dB)	-9.16	-10.54	-9.92	-8.46	-8.87	-7.87	-7.53	-6.86	-7.43	-6.66	-5.86	-5.68	-5.48

1	2	3	4	5	6	7	8																									
HF☐ RoHS☒ REACH☐ CONFIDENTIAL					<table><tr><td>SIGN</td><td>DATE</td><td>DESCRIPTION</td><td>APPROVER</td></tr><tr><td>△</td><td></td><td></td><td></td></tr><tr><td>△</td><td></td><td></td><td></td></tr><tr><td>△</td><td></td><td></td><td></td></tr></table>			SIGN	DATE	DESCRIPTION	APPROVER	△				△				△												
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B	Note: 1.Mark * is important dimension;"Cpk "Identify for process control(CpK≥1.33). 2.Tolerance:Unmarked tolerance refer to the standard tolerance please.							B																								
A	<table><tr><td>3</td><td>PB-NB1597-02PB</td><td>FPC</td><td>PI</td><td>BLACK</td><td>1</td></tr><tr><td>2</td><td>R-CB-113G</td><td>Coaxial Cable</td><td>OD1.13</td><td>Darkgray</td><td>1</td></tr><tr><td>1</td><td>CR-113</td><td>Connector</td><td>Cu</td><td>Au Plating(IPEX一代)</td><td>1</td></tr><tr><td>No.</td><td>Part Number</td><td>Name</td><td>Material</td><td>Finish</td><td>Q'ty</td></tr></table>							3	PB-NB1597-02PB	FPC	PI	BLACK	1	2	R-CB-113G	Coaxial Cable	OD1.13	Darkgray	1	1	CR-113	Connector	Cu	Au Plating(IPEX一代)	1	No.	Part Number	Name	Material	Finish	Q'ty	A
3	PB-NB1597-02PB	FPC	PI	BLACK	1																											
2	R-CB-113G	Coaxial Cable	OD1.13	Darkgray	1																											
1	CR-113	Connector	Cu	Au Plating(IPEX一代)	1																											
No.	Part Number	Name	Material	Finish	Q'ty																											
1	2	3	4	5	6	7	8																									

Invax System Group.

Cortec

Cortec Technology Inc.

Http://www.invaxsystem.com

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Tel :886-2-27885218

Fax:886-2-27831658

TITLE: Embedded Antenna

PART NO.: NB1597-A235GF

CUSTOMER P/N: /

APP BY	CHK BY	RF BY	DES BY		Tolerance
SF	YS		LISA	UNITS: mm	X.X ±0.5
2024.10.07	2024.10.07		2024.10.07	SCALE: 1/1	X.XX ±0.3
				REVISION: A	X° ±1

Date: 2024.10.07

Page: 1 of 1

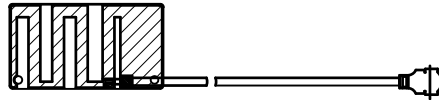
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Revision : A

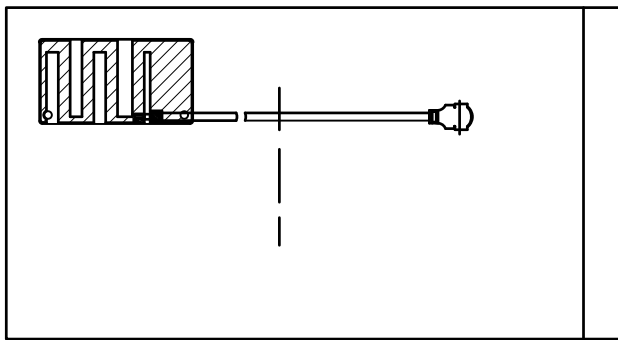
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Customer :

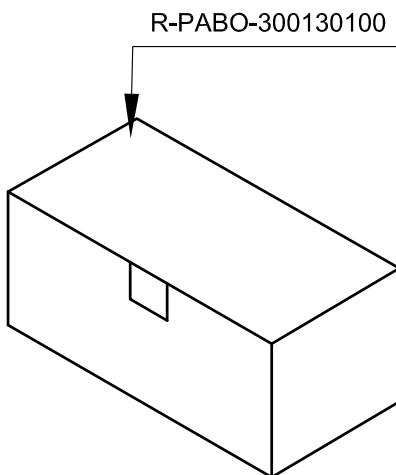
1. The Product



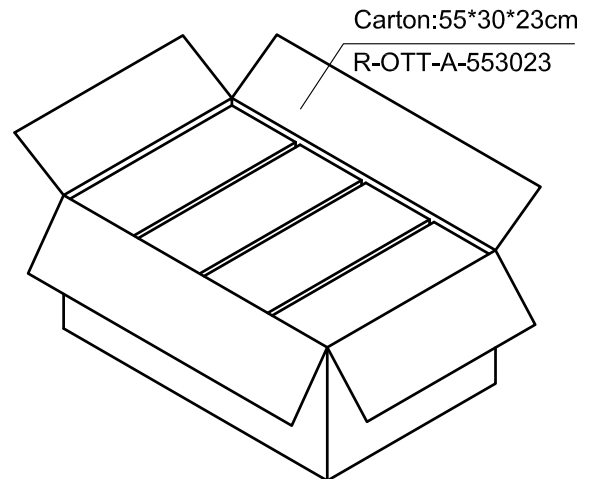
2. 40 PCS/per Bag



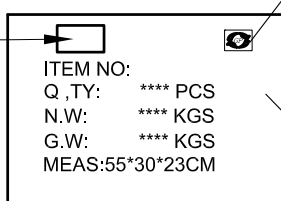
3. 1000 PCS/per Box



4. 8000 PCS/per Carton



Carton Label:



Green Label

Side Mark



Case Mark

APPROVED BY : SF CHECKED BY : YS DESIGNED BY : LISA

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-47b

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：NB1597-A235GF

序號	物料型號	物料各構成名稱	各構成物料 的材質	測試報告裡RoHS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	PB-NB1597-02PB	FPC	PI	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	SHAEC24000428806	2024.01.12	电解柔性覆铜箔基材	SGS
2	R-CB-113B	Cable	FEP黑色	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	A2240269286101001	2024.05.21	FEP masterbatch	CTI
			FEP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	NGBPC24000131241	2024.01.16	FLUORINATED ETHYLENE	SGS
			镀锡铜	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	A2240182175102001E	2024.04.12	TINNDE COPPER WIRE	CTI
			镀银铜	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC24002005301	2024.01.31	SC	SGS
3	CR-113	Mini Connector	PBT	N.D.	6.94	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ETR23C01966	2023.12.19	POLYBUTYLENE	SGS
			铜	N.D.	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC24000977301	2024.01.22	BRONEZ:C5210	SGS
			镀金层	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	A2240052105101001E	2024.02.04	金镀层	CTI

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2015/865/EU、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%