



奇揚網科股份有限公司
Awind inc.

承 認 書
APPROVAL SHEET

奇 揚 網		供 應 商	
料 號	300000000006	名稱	EACH-TAI
		料號	RFD-0710004
		名稱	以下空白
品 名	DIPOLE ANTENNA 2.4GHz 2dBi	料號	
		名稱	
		料號	

申 請 單 位		會 簽 單 位		
申請人	單位主管		PM	
			業務	
			RD-電子	
		V	RD-機構	
		V	品管-QA	
			其他需會簽單位	

奇揚網科股份有限公司



CABLE/HARNESS/CONNECTOR
 ISO 9001:2000
 ISO 14001:2004

承認書

SPECIFICATION FOR APPROVAL


客戶名稱 (CUSTOMER) : 奇揚網科

機種型號 (MODEL NO.) : _____

品 名 (PART NAME) : 2.4Ghz dipole antenna

料 號 (PART NO.) : RFD-0710004

發行日期 (ISSUE DATE) : 2007.11.08

鑑 台 確 認 (EACH-TAI CONFIRMATION)	客 戶 確 認 (CUSTOMER CONFIRMATION)
	

核 准 (APPROVAL)	確 認 (CHECK)	制 作 (PREPARE)
Vincent	Macro	macro



EACH-TAI CORPORATION
東莞鎰臺電子有限公司
TECHNOLOGY CORPORATION

目錄

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DET NORSKE VERITAS MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 0253-2002-AQ-RGC-UKAS

This is to certify that

**EACH-TAI CORPORATION
DONG GUAN YITAI ELECTRONICS LTD.**

at

8F, No. 276, Sec. 3, Pei-Shen Rd., Shen Ken, Taipei, Taiwan, R.O.C.
Hengkeng Guanliqi Dongguan, Liaobu, Guangdong, P.R. China

has been found to conform to the Management System Standard:

ISO 9001:2000

This Certificate is valid for the following product or service ranges:

MANUFACTURE OF WIRE HARNESS AND CABLES

Initial Certification date:

June 28th, 2002

Place and date:

Hong Kong, September 23rd, 2005

This Certificate is valid until:

June 28th, 2008

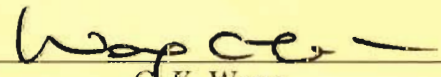


for the Accredited Unit:

DNV CERTIFICATION B.V.,
THE NETHERLANDS

The audit has been performed under the supervision of:

Joseph Chu
Lead Auditor


C.K. Wong

Management Representative

Lack of fulfilment of conditions as set out in the Appendix may render this Certificate invalid.

DNV 7269/2.0



EACH-TAI CORPORATION
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TECHNOLOGY CORPORATION

天線規格表

規格:

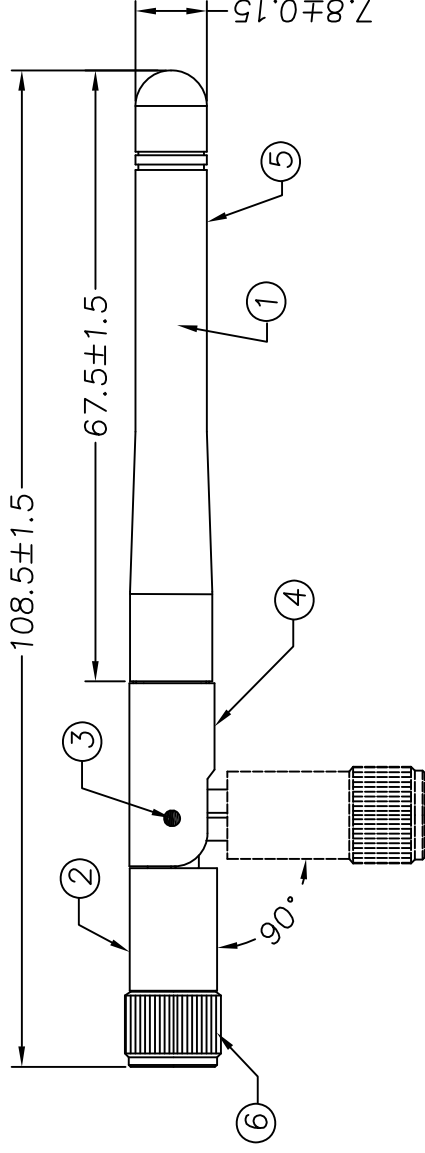
1. Electrical Properties

1.1	Frequency Range.....	2.4Ghz ~2.5Ghz
1.2	Impedance.....	50Ω Nominal
1.3	VSWR.....	2.0Max
1.4	Radiation.....	Omni-Directional
1.5	Gain(peak)	2dBi
1.6	Polarization.....	Linear Vertical
1.7	Admitted Power	1W

2. Physical Properties

2.1	Antenna Cover.....	TPEE
2.2	Operating Temp.....	-20°C ~+65°C
2.3	Storage Temp.....	-20°C ~+65°C
2.4	Color.....	Black

REV	DATE	ECN NO	DESCRIPTION	Name
1.00	10/26		NEW RELEASE	Beck



NOTE:
 1. DESCRIPTION: $1/4 \lambda$ SWIVEL TYPE DIPOLE ANTENNA
 2. FREQUENCY: 2.4~2.5GHz
 3. IMPEDANCE: 50 Ohm Nominal
 4. V.S.W.R: ≤ 2.0
 5. PEAK GAIN: 2.0 dBi
 6. OPERATING TEMPERATURE RANGE: $-20C \sim +65C$
 7. FINISHED COLOR: BLACK

Weight: 0.00989kg

6	SMA	50SMAB09HBT2GIN	SMA 公頭 PIN C02-0038	1																		
5	杆套	8D206750008	BLACK 材質 TPE63D	1																		
4	上固定座	8D202880009	BLACK 材質 PC-L1250Z	1																		
3	鎖釘	8E500380016	材質 POM 黑色	2																		
2	下固定座	8D201970009	BLACK 材質 PBT-310-SEO	1																		
1	WIRE	1RG178BR011CA-36	RG-178B/U#30 OD:1.8 mm 透明漆 鍍銀	1																		
ITEM	NAME	PART NO.	SPEC	Q'TY	VENDOR	APPROVE	CHECKED	DRAWN														
TITLE:	2.4GHz SMA ANTENNA																					
DWG NO:	RFD-0710004	SHEET : 1 OF 1										UNIT	m/m	SCALE	FREE	Vincent					Macro	Beck



CUSTOMER:
奇揚網科

CUSTOMER PART NO:
ORD NO:
REF NO:

RFD-0710004

CHECKED

DRAWN

Macro

Beck

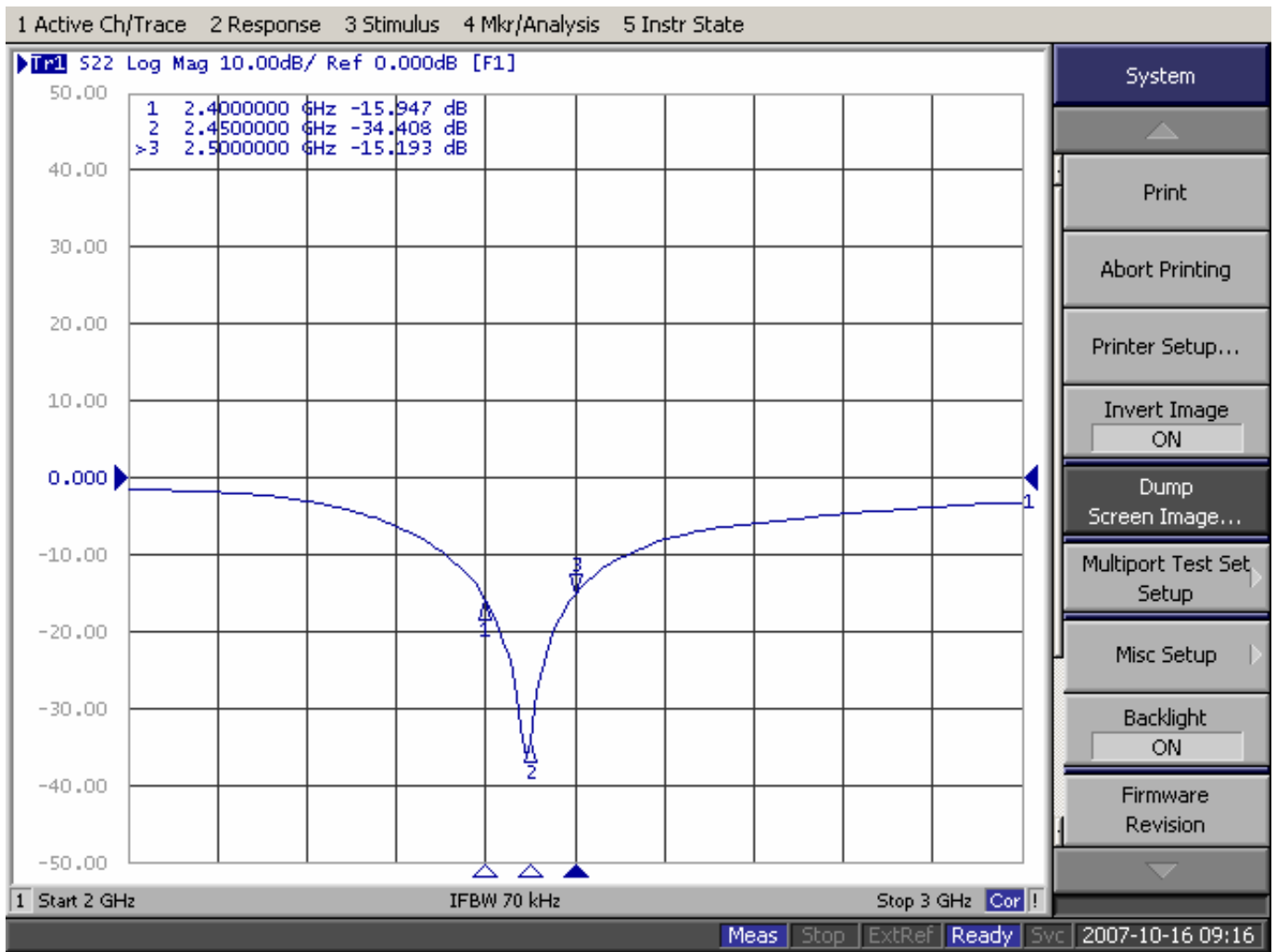
網絡分析儀測試報告(Return_loss)

客戶 Customer: 奇揚網科

客戶料號 Order No: RFD-0710004

品名 Part Number:2.4Ghz dipole antenna

日期 Date: 2007-11-08



核准 Approved By: Vincent

制作 Checked By: Macro

日期 Date:2007-11-08

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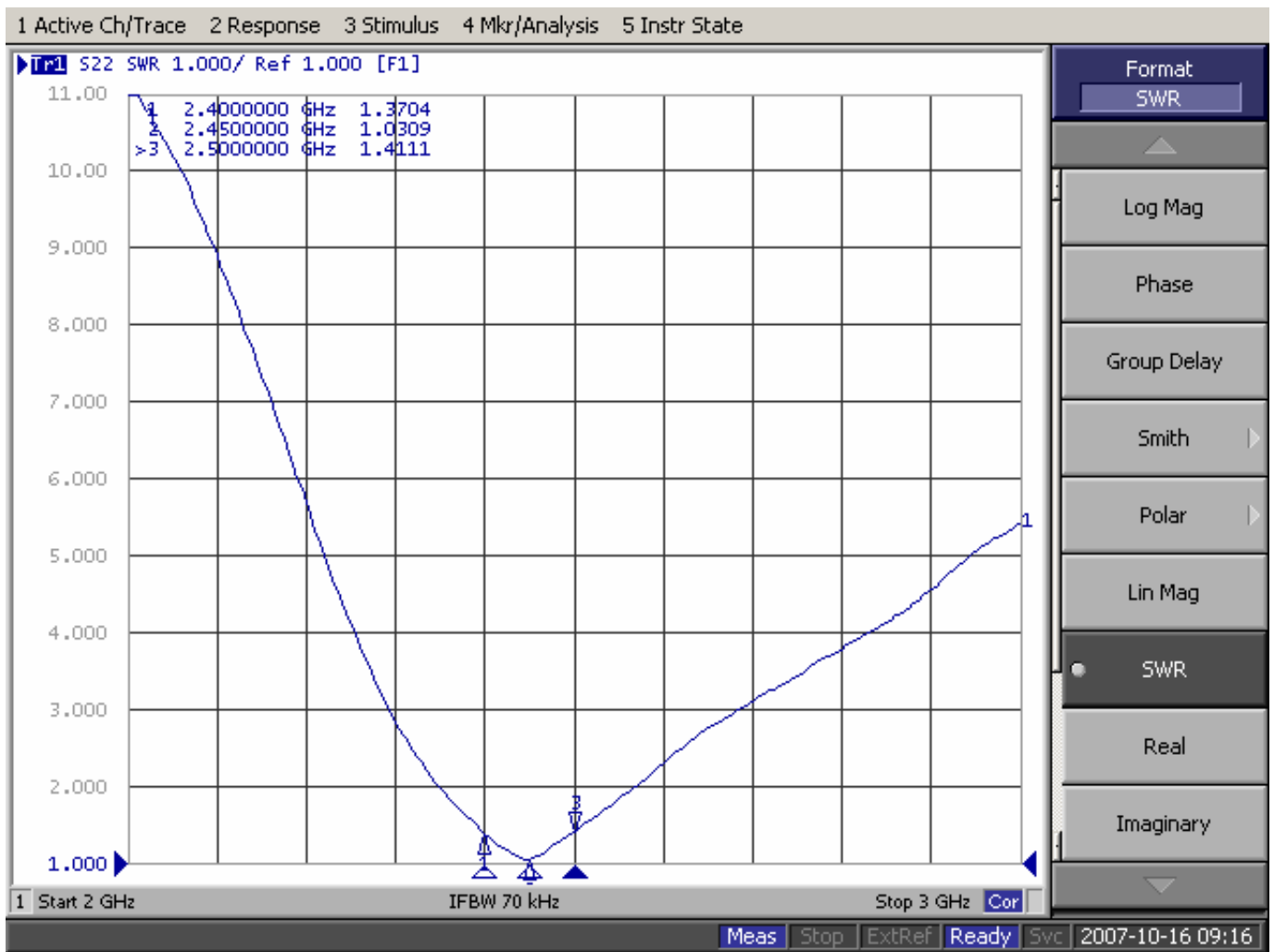
網絡分析儀測試報告 (VSWR)

客戶 Customer: 奇揚網科

客戶料號 Order No: RFD-0710004

品名 Part Number:2.4Ghz dipole antenna

日期 Date: 2007-11-08



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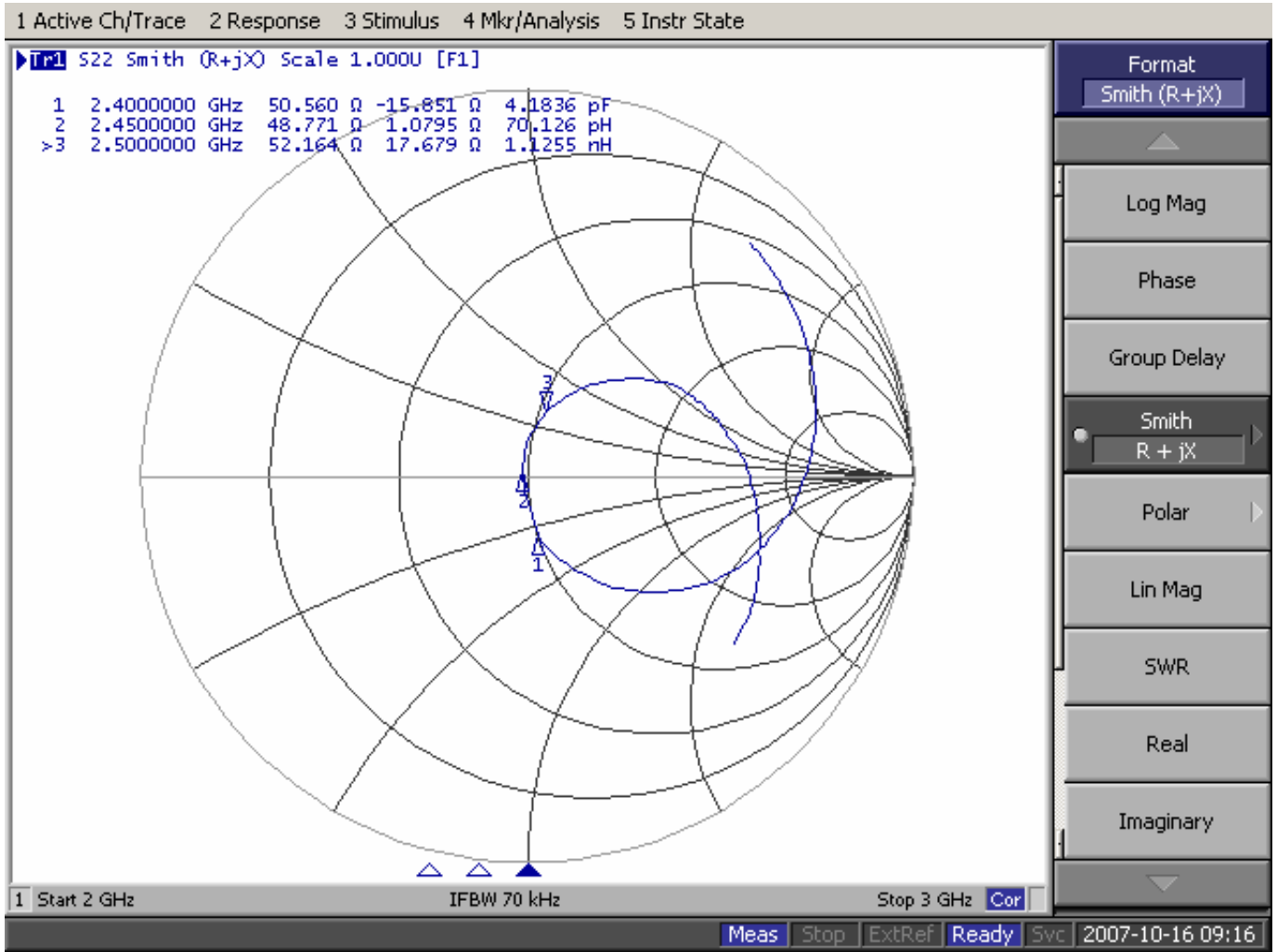
網絡分析儀測試報告 (Smith Chart)

客戶 Customer: 奇揚網科

客戶料號 Order No: RFD-0710004

品名 Part Number:2.4Ghz dipole antenna

日期 Date: 2007-11-08



核准 Approved By: Vincent

制作 Checked By: Macro

日期 Date:2007-11-08

日期 Date:2007-11-08

天線場型圖 Radiation Pattern:

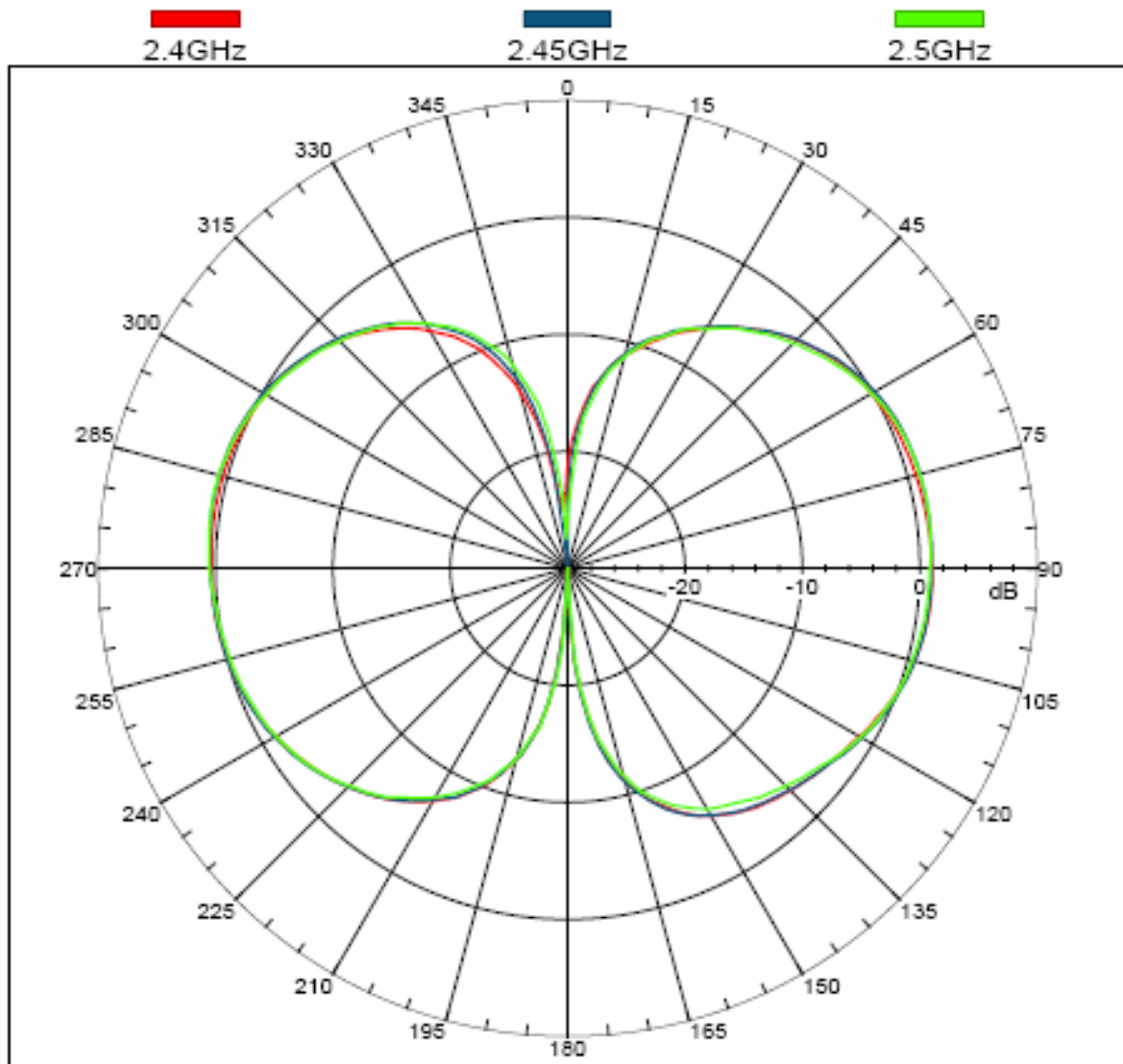
客戶 Customer: 奇揚網科

客戶料號 Order No: RFD-0710004

品名 Part Number: 2.4Ghz dipole antenna

日期 Date: 2007-11-08

SPEC: 2.4Ghz~2.5Ghz
Far-field amplitude of E-plane



核准 Approved By: Vincent

制作 Checked By: Macro

日期 Date: 2007-11-08

日期 Date: 2007-11-08

天線場型圖 Radiation Pattern:

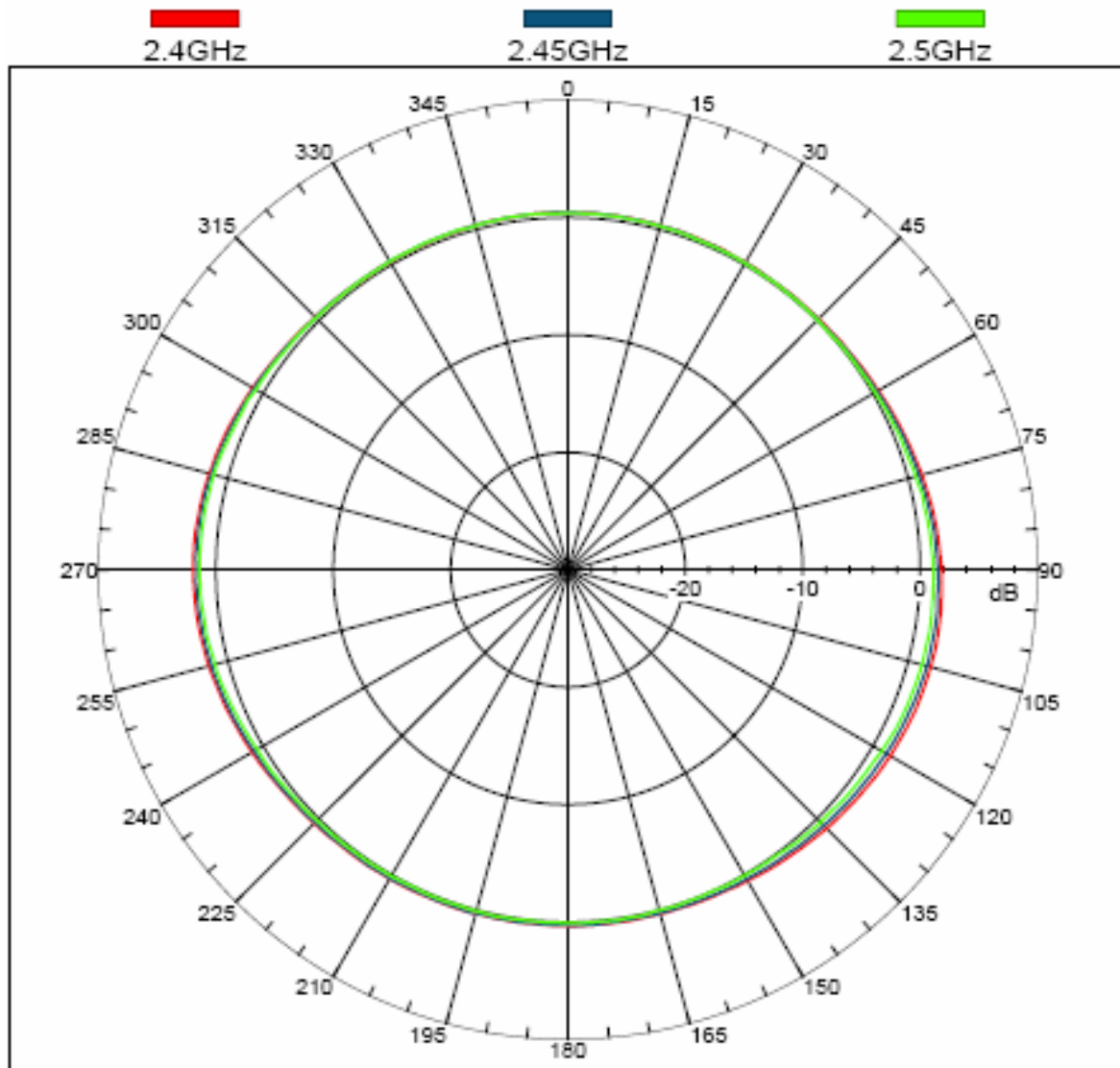
客戶 Customer: 奇揚網科

客戶料號 Order No: RFD-0710004

品名 Part Number:2.4Ghz dipole antenna

日期 Date: 2007-11-08

SPEC:2.4Ghz~2.5Ghz
Far-field amplitude of H-plane



核准 Approved By: Vincent

制作 Checked By: Macro

日期 Date:2007-11-08

日期 Date:2007-11-08

ON-HOLD TECHNOLOGY CORPORATION

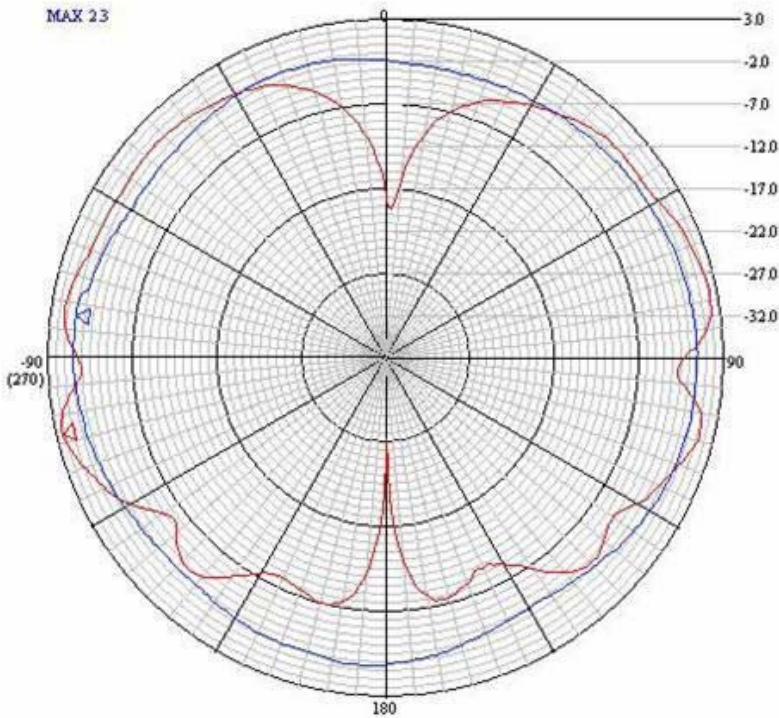
RF Antenna Assembly SPEC:2.4~2.5GHz



Far Field Patterns
Frequency: 2.4000

E&H-PLANE Linear: 0-deg Cuts

Scan Surface:	Direct Far-Field	
No. of Theta:	361	Freq.: 2.400 - 2.500 GHz
No. of Phi:	2	Polarization: Linear
Theta (2-way):	360 deg	AUT Probe Separation: 168.00
Phi (1/2-way):	180 deg	Reference Power: -38.34 dB



Line Name	Peak Angle	Max Value	Deep Angle	Min Value	Ave Value
E-plane Cut	-193.0	2.3	175.0	-27.3	-3.7
H-plane Cut	-82.0	0.1	149.0	-5.2	-1.3

c:\antcom\data\Exc-TongWei3dB-Aug13.DF1

Frequency:2.4GHz	Max value(dBi)	Average(dBi)
E Plane	2.3	-3.7
H Plane	0.1	-1.3

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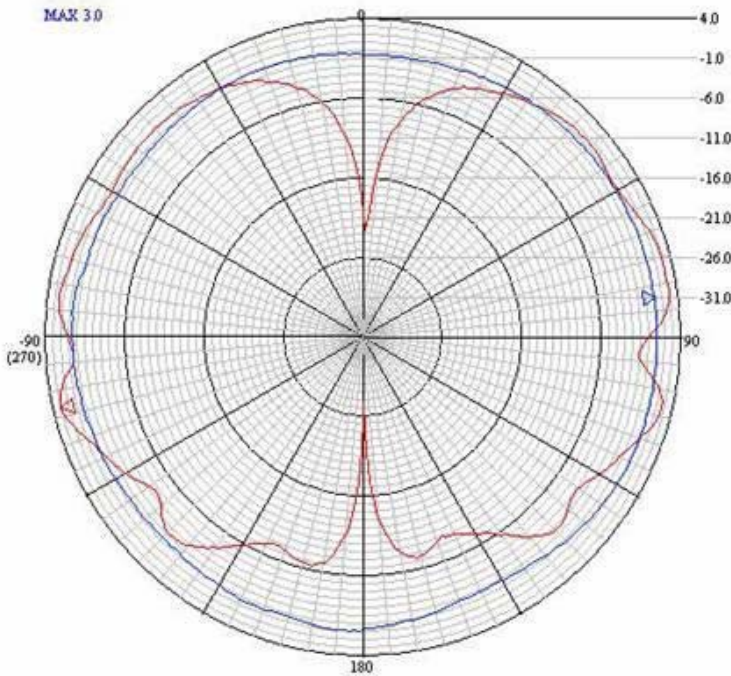
RF Antenna Assembly SPEC:2.4~2.5GHz



Far Field Patterns
Frequency: 2.4500

Scan Surface: Direct Far-Field	
No. of Theta: 361	Freq.: 2.400 - 2.500 GHz
No. of Phi: 2	Polarization: Linear
Theta (2-way): 360 deg	AUT Probe Separation: 168.00
Phi (1/2-way): 180 deg	Reference Power: -38.34 dB

E&H-PLANE Linear: 0-deg Cuts



Line Name	Peak Angle	Max Value	Deep Angle	Min Value	Ave Value
E-plane Cut	-182.0	3.0	179.0	-25.1	-2.3
H-plane Cut	32.0	1.0	152.0	-1.1	0.2

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Frequency:2.45GHz	Max value(dBi)	Average(dBi)
E Plane	3.0	-2.3
H Plane	1.0	0.2



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ON-HOLD TECHNOLOGY CORPORATION

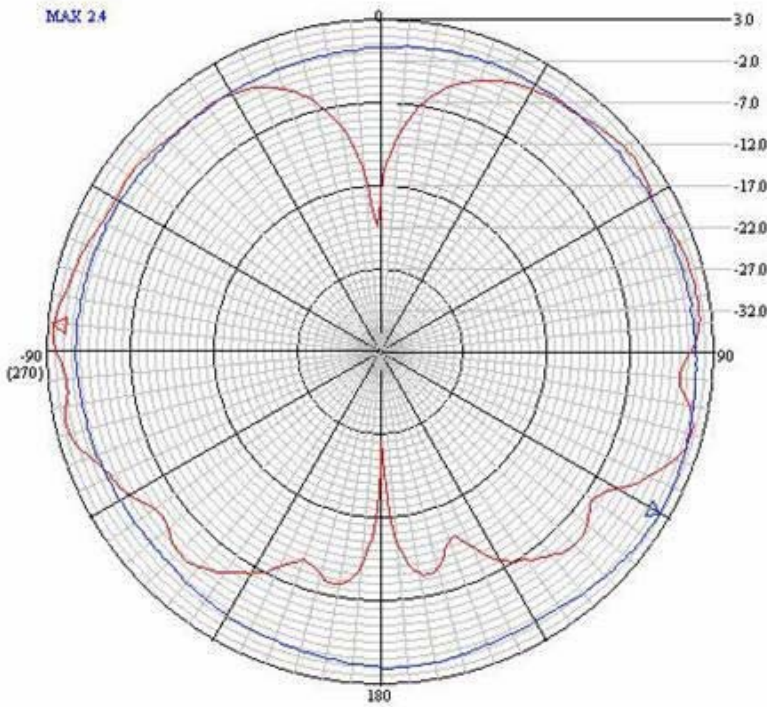
RF Antenna Assembly SPEC:2.4~2.5GHz



Far Field Patterns
Frequency: 2.5000

E&H-PLANE Linear: 0-deg Cuts

Scan Surface: **Direct Far-Field**
 No. of Theta: 361 Freq.: 2.400 - 2.500 GHz
 No. of Phi: 2 Polarization: Linear
 Theta (2-way): 360 deg AUT Probe Separation: 168.00
 Phi (1/2-way): 180 deg Reference Power: -38.16 dB



Line Name	Peak Angle	Max Value	Deep Angle	Min Value	Ave Value
E-plane Cut	-85.0	2.4	179.0	-26.6	-3.7
H-plane Cut	120.0	1.6	-120.0	-1.3	0.0

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Frequency:2.5GHz	Max value(dBi)	Average(dBi)
E Plane	2.4	-3.7
H Plane	1.6	0.0

17.5
PA
5/2

Material Safety Data Sheet

I - Identification of the substance / preparation and company

Product Information : Glass Fiber Reinforced Nylon 66
Product Number : DNG-1130
Information on Producer/Supplier Name · Addresses · Phone : Star One Industrial Co., Ltd. 4F-6, No. 3, Wu-Chuan 1 st rd., Hsin Chuang, Taipei Hsien, Taiwan
Emergency Phone / Fax : 02-22990160 / 02-22990163

II - Composition / Information on Ingredients

Single

English Name :
Synonyms :
Chemical Abstracts Number (CAS No.) :
Percentage for Chemical Ingredient (%) :

Mixing :

Chemical Characte :		
Hazardous Components Name	Concentration / Percentage	Hazard Symbols
Nylon	70%	None
Glass Fiber	30%	None

III - Hazard Identification :

Major Hazard Effect
* Hazard Warnings for Health : None
* Hazard Warnings for Environment : None
* Physical and Chemical Dangerous : None
* Special Harm : None
Major State : None
Hazard Category : Flammability

四、First Aid Measures :

Emergency and First Aid Procedures (Glass fiber)

- **Inhalation :** Remove to fresh air, Drink Water to clear throat and blow nose to evacuate dust.
- **Skin Contact :** Wash with mild soap and warm water
- **Eye Contact :** Flush with large amounts of water until irritation subsides, as least 15 minutes
- **Ingestion :** Emergency procedures not normally required

Major Disease and Harm Effect : None

First-Aid Personal Protection : None

Prompt to Doctor : If coughing and irritation develop, call a physician (Glass fiber)

五、Fire Fighting Measure :

Suitable Extinguishing Media : Use water spray, dry chemical, foam, or carbon dioxide to extinguish flames.

Special Exposure Hazards : Hazardous melting and dripping may occur at elevated temperatures. May burn at or above flesh point.

Special Extinguishing Procedure : Firefighters should wear NIOSH/MSHA approved Self-contained breathing apparatus and full protective Clothing.

Special Protection Equipment : No special equipment or procedures required

六、Accidental Release Measures

Personal Protection : None

Environmental Protection : None

Methods for Cleaning Up : Sweep up and place in an appropriate closed container.

七、Handling and Storage

Handling : Practice good housekeeping and clean up spills immediately, as this product can present a serious slipping hazard

Storage : Periods of exposure to high temperatures should be minimized

八 · Exposure Control / Personal Protection

Engineering Control : It is recommended that adequate ventilation be provided at external extrusion points where the product is at elevated temperatures
Control Factor : • TWA/STEL/CEILING : None
Personal Protection Equipment : • Respiratory Protection : Air borne concentrations • Hand Protection : Gloves and boots resistant to chemicals and petroleum distillates • Eye Protection : Safety glasses. Chemical type goggles • Skin & Body Protection : Protective clothing such as coveralls or lab coats
Hygiene Procedures : No fire at work place

九 · Physical and Chemical Properties / Characteristics

Appearance : Pellets	Form : Pellets
Colour : NATURAL	Odour : Odorless
pH value : (0.1M) Not applicable	Boiling Point / Boiling Range: °C Not applicable
Decomposition Temperature : 350 °C	Flash Point : °F °C Test Method : Not applicable <input type="checkbox"/> Open Cup <input type="checkbox"/> Close Cup
Spontaneous Temperature : Not applicable	Exposure Limits : % Not applicable
Vapor Pressure : Not applicable (Below) mmHg@20°C	Vapor Density : (Air=1.0) Not applicable
Specific Gravity : 1.10 ~ 1.12	Solubility in Water : g/L Insoluble

十 · Stability and Reactivity

Stability : Stable at normal temperature and storage conditions (Melting Point : 250°C)
Special Conditions of Hazardous Reaction : At processing temperature some degree of thermal degradation will occur.
Conditions to Avoid : High temperature, fire.
Incompatibility : Incompatible with strong oxidants
Hazardous Decomposition Products : None

十一、Toxicological Information

Acute Toxicity : None

Local Effects : None

Sensitive : Low

Chronic : None

Exceptional Effect : None

十二、Ecological Information

Possibility of Environmental Impact/Move : Not biodegradable, can be recycled

十三、Disposal Information

Disposal Information : This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form

十四、Transport Information

International Transport Regulation : DOT, ICAO, IMDG Not regulated

The United Nations Number (Un-No) : None

Internal Transport regulation : Not regulated

Special Transport Way and Note : Not regulated

十五、Regulation Information

Apply Regulation : Taiwan Ministry of International Trade and Industry Inventory

十六、Other Information

Reference	1. CAS 9010-79-1 (Huntsman) 2. CAS65997-17-13 (Knauf) 3. CAS25722-45-6 (Dupont)				
Make Unit	Name : Star One Industrial Co., Ltd.				
	Addresses/Phone : No. 12, 2 ND ST., Poutzu Industrial District, Poutzu Jen, Chiy Yi Hsien Taiwan. / 05-3693211				
Make People	Professional Post : Manager			Name (Sign) : Hou Wen-Hsiung	
Make Date	94.05.17				
Document No.	940517MD2	Version	1	Document type	MSDS

Safety Data Sheet

complies with: directive 91/155/EEC
ISO 11014-1: Safety data sheet for chemical products.

revision: 2.0

revision date: 19/01/1996
date of issue: 16/12/1997

P

1. Product and company identification

Product name: TPE-E
Product code: ELS5F
Manufacturer: Tong Siong International
No.68, Zihciangsin Rd, Yilan City, Yilan
County 260, Taiwan(R.O.C)

Emergency number: (886)3-9362005

2. Composition/Information on Ingredients

This chemical product is a preparation

Chemical nature: Thermoplastic polyether -ester elastomer
CAS number: 37282-12-5
Components contributing to the hazard:
Not relevant

3. Hazards Identification

Most important hazards:

Hazard warning not required

Specific hazards:

Vapour and fumes released at elevated processing temperatures may be irritant for the eyes, the nose, the throat and the respiratory tract and in case of overexposure may cause nausea and headache.

The material is not classified as being a dangerous preparation according to the EEC-Directive 88/379 and the subsequent amendments. See also Section 15.

4. First-Aid measures

Inhalation:

When fumes of molten material have been inhaled;

- Move person to fresh air as quickly as possible
- rest in half upright position
- loosen clothing
- keep warm

In case of respiratory problems move person to first aid station for medical treatment.

Skin contact:

Any molten material on the skin/burns should be cooled (off) as quickly as possible by means of cold water. Cover the wound with sterile cloth and move person to first aid station or hospital for medical treatment. Attention: never pull off the molten material from the wound.

Eye contact:

Any material entering the eye should be flushed out with copious volumes of water.

Ingestion:

No danger of toxicity, this material is biologically inactive (see also Section 11).

revision: 2.0

revision date: 19/01/1996
date of issue: 16/12/1997

5. Fire-fighting measures

Extinguishing media:

Water, water/foam, CO₂, ABC fire extinguisher powder.

Specific Hazards:

Treat the material as a solid that can burn. Moulded parts or solid granules generally burn slowly with flaming drips.

In case of fire appreciable quantities of carbon monoxide are released in combination with irritating and/or toxic substances.

Protection for the fire-fighters:

Do not approach fire in confined space without positive pressure self breathing apparatus and full bunker gear: bunker coats, helmet with face shield, gloves, rubberboots.

6. Accidental release measures

Personal precautions:

- Apply ample grounding with respect to dust explosion danger caused by released dust from granulate supply (filters): see section 7.
- Protection of skin/eye/hand: see section 8.

Environmental precautions:

Disposal considerations- see section 13.

Cleaning up methods:

Shovel or sweep up, use especially industrial vacuum cleaner to suck possible fines/dust. Avoid generating dust clouds. Put into containers for reclaiming or disposal.

7. Handling and storage

Handling

Technical measures:

Make provisions for sufficient ventilation and local exhaust at vent, nozzle and ejected melt.

Precautions:

Dust and processing fumes must be removed by effective exhaust ventilation.

Storage

Technical measures and storage conditions:

The material should be stored on a dry place.

Incompatible products:

Stack pallets only two high when storing in order to prevent collapsing.

8. Exposure controls/personal protection

Control parameters:

Threshold Limit Value (TLV): a provisional TLV (TWA 8 hours) is advised in accordance with the TLV of non-toxic nuisance dust:

- 10 mg/m³ for total dust.
- 5 mg/m³ for respirable dust.

Personal protective equipment:

- Respiratory protection: when TLV is accidentally exceeded see section 7 (prevention dust generation).
- Hand protection: when handling a hot melt, heat resistant gloves should be worn (e.g. when purging a processing machine).
- Eye protection: when handling a hot melt, heat resistant face shields should be worn (e.g. when purging a processing machine).

revision: 2.0

revision date: 19/01/1996
date of issue: 16/12/1997

- Skin and body protection: the use of apron, boots and/or full protective suit is not prescribed here; it is up to the decision of the processor.

Hygiene measures:

Adequate washing facilities, with supplies of mild soap and hand cleanser should be available at all working locations. Solvents should never be used as hand cleansers. Smoking, eating and drinking in working and storage areas should be prohibited.

9. Physical and chemical properties

Physical state	: solid, at 20°C.
Form	: granulate.
Colour	: natural opaque, dependent on added pigment.
Density	: > 1.0 g/cm ³ .
Melting point/range	: 185 - 221°C. (depending on grade)
Odour	: no special odour.
Solubility in water	: insoluble.
Decomposition Temp.	: > 300°C.
Flashpoint	: > 345°C.
Auto Ignition Temp.	: > 345 °C.
Dust Explosive Properties:	
Lower Explosion Limit (LEL)	: < 10g/m ³ .
Minimum Ignition Temp.	: >350 °C.
Dust Explosion Class (st)	: 1

10. Stability and reactivity

Stability:

The material is chemically unreactive. Under certain conditions however hazardous reactions can take place.

Conditions to be avoided:

Temperatures >300° C and/or long residence times should be avoided since thermal degradation occurs.

Materials to avoid:

Strong oxidising agents.

Hazardous decomposition products:

At processing temperatures some degree of thermal degradation will occur. Although highly dependent on temperature and environmental conditions, traces of a variety of toxic and/or irritating gases may be evolved.

11. Toxicological Information

Acute toxicity:	None (LD ₅₀ oral rat >5000 mg/kg)
Local effects:	The material appears to be a non-toxic substance in standard toxicological and ecotoxicological tests and is regarded as biologically inactive.

12. Ecological Information

Persistence/degradability:	very low UV degradability.
Ecotoxicity:	no indication that this material is being a risk to the environment.
Aquatic toxicity:	insoluble non toxic solid material (no water hazard).

revision: 2.0

revision date: 19/01/1996
date of issue: 16/12/1997

13. Disposal Considerations

This material - as well as the packaging there off - presents no danger regarding toxicological and/or ecological considerations. It can be burnt in a controlled way or be disposed of via Landfill, or it can be recycled for - possibly less critical - non food applications.

Note: Additional national or regional provisions may be in force within this matter.

14. Transport Information

General precautions

Keep this material dry during transport.

Special precautions

No special precautions have to be met.

This material is not classified according to the recommendations of the UN (8 edition) on the transport of dangerous goods.

15. Regulatory information

Labelling according to EEC directive 88/379/EEC and subsequent amendments is not required. Additional national legislation may be in force in this matter.

EEC classification: No dangerous preparation.

R(isk) phrases: N.a.

16. Other information

None of the materials and/or products referenced herein should be used and/or applied in any product, device or material used or for use as human body implant or otherwise within the human body.

* represents changes made to the document since the last revision date of the document.