

Annex no. 11

Antenna Descriptions

承 認 書
SPECIFICATION FOR APPROVAL

客 戶
CUSTOMER

Endrich

日 期
DATE

2011/4/12

品 名
DESCRIPTION

WSS007 868~916MHz Dipole Antenna
with RP-SMA(M)(Black)

客 戶 料 號
CUSTOMER P/N

成 品 編 號
Part NO.



萬旭電業股份有限公司

WANSHIH ELECTRONIC CO., LTD.

台北縣五股鄉五工六路 72 號 3 樓

3F 72 WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT

TAIPEI HSIEN, TAIWAN, R.O.C.

TEL : (02) 22988066 (5 LINE) FAX : (02)22981102

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SPECIFICATION

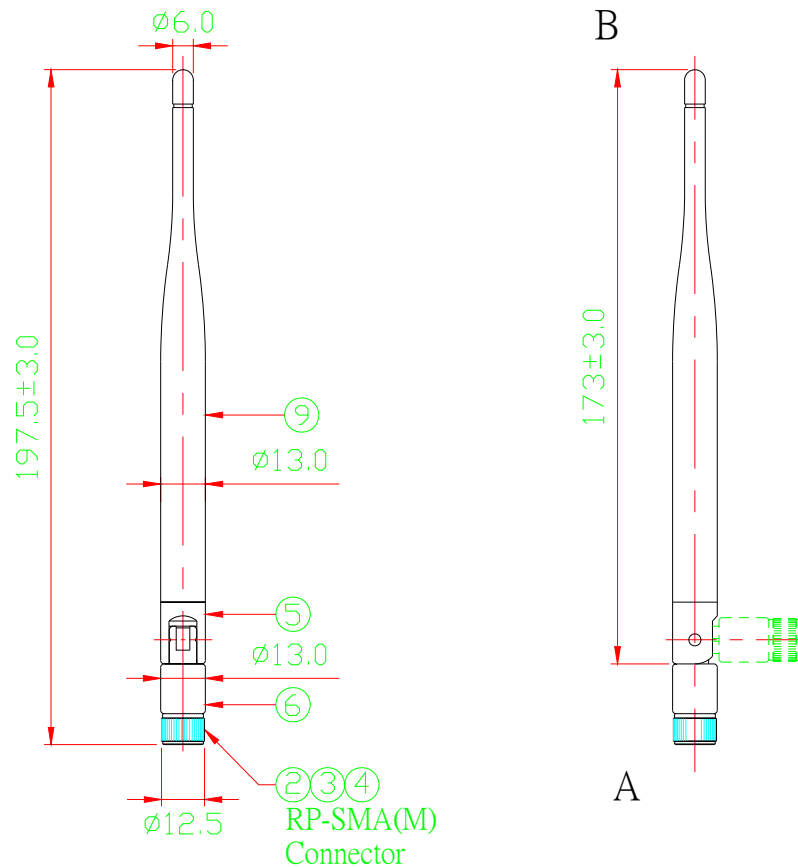
1. Description : WSS007 868~916MHz Antenna
2. Customer : Endrich
3. Model No. : WSS007
4. Part No. :
5. Antenna Profile : 197.5 mm (see Drawing)
6. Color : Black
7. Electrical Characteristics
 - Operating Frequency : 868~916MHz
 - Antenna Type : Dipole
 - Polarization Type : Linear
 - Type of Radiation : Toroidal
 - Impedance : 50 Ohm nominal
 - V.S.W.R. : 2.5:1 Max.
8. Mechanical Characteristics
 - Swivel : 90 degrees
 - Connector : RP-SMA(M)
 - Core : N/A
9. Raw Material
 - Coaxial Cable : RG-178
 - Housing : TPU
 - Hinge : PC+ALLOY

TOLERANCES:	
X	±0.5
X.X	±0.3
X.XX	±0.1
ANGULAR	±5.0°

Signature / Stamp

Customer Approved
 Unofficial Drawing

機構 (技術分類) :
 應用 (業務分類) :
 材質 (生管分類) :



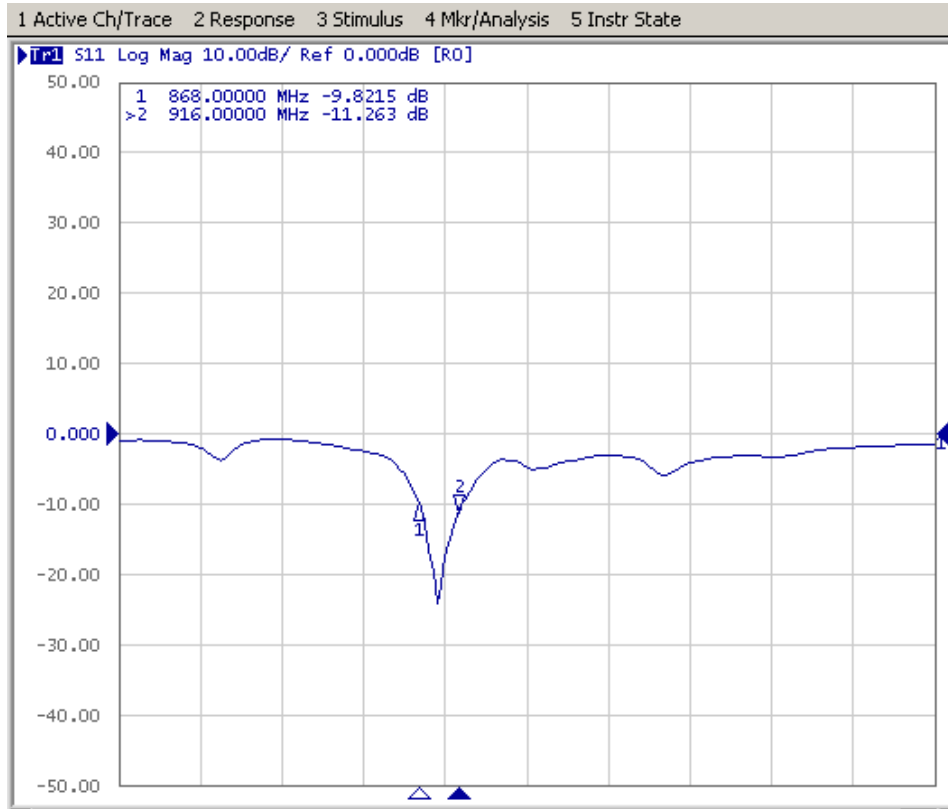
9	Housing	√	13 φ *L155 Housing	Black		1	or Equivalent
8	Sleeve	√	6.8 φ *68L(76L)For 178 Sleeve			1	or Equivalent
7	Rivet	√	028922001-6 4.80*1.95 φ Rivet	Black		2	or Equivalent
6	Hinge-Base	√	13 φ Hinge-Base *25.5L	Black		1	or Equivalent
5	Hinge-Holder	√	13 φ Hinge-Holder *28L 15.2*7.25	Black		1	or Equivalent
4	Shaft	√	SM3056-C Shaft	silver		1	or Equivalent
3	PIN	√	SM3056-B female PIN			1	or Equivalent
2	RP-SMA φ 12.5 Body	√	SM3056-A Body RP-SMA(M) φ 12.5 Connector W/P	Black		1	or Equivalent
1	RG-178 Coaxial Cable	√	RG-178 CABLE 105SV	Orange		1	or Equivalent
NO	Material	GM	Description	Color	Dim	Qt'y	Remark

Revise Date:		Edit Date: 2010/12/21			PART NUMBER	
3rd VIEW	APPROVED	CONFIRM	CHECK	DRAWING	PART NAME	
UNIT: mm	Jason	C.S.LIU	Emily	Mandy	WSS007 868~916MHz Dipole Antenna with RP-SMA(M)(Black)	
SCALE:FREE					CATEGORY <input checked="" type="checkbox"/> A:Product <input type="checkbox"/> B:Semi-Production <input type="checkbox"/> C:Sample	
					Engineering NO.	VERSION A1

衛星廠成品編號 : 文件編號 : FMT-0513-H5 頁次 : 1/1

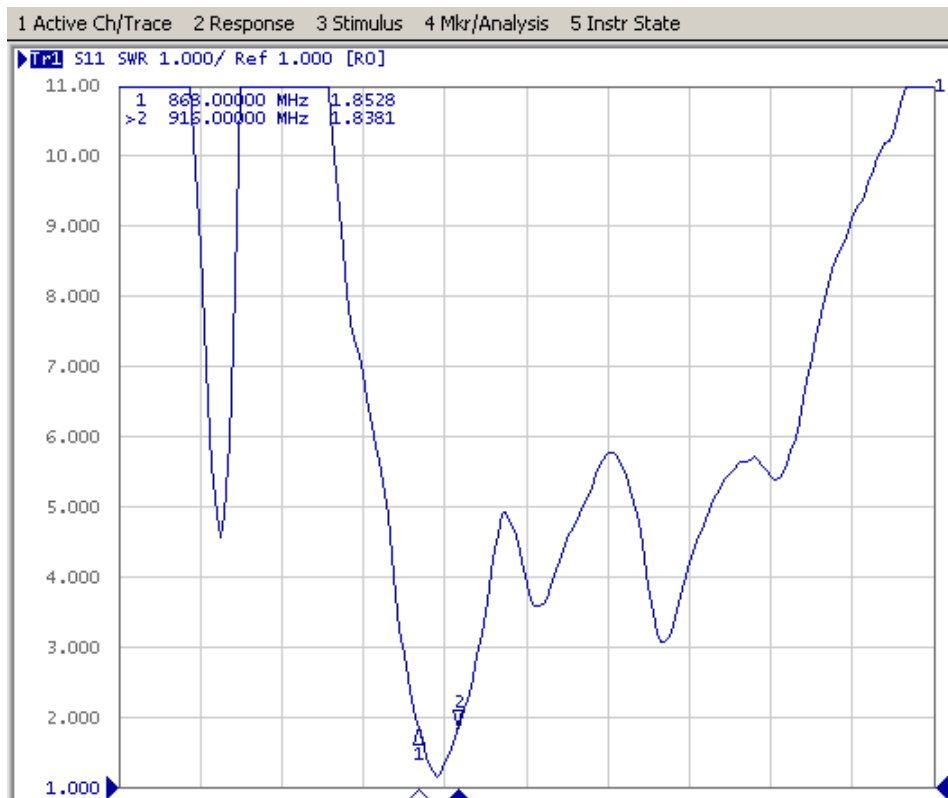
Electrical Properties

Return Loss

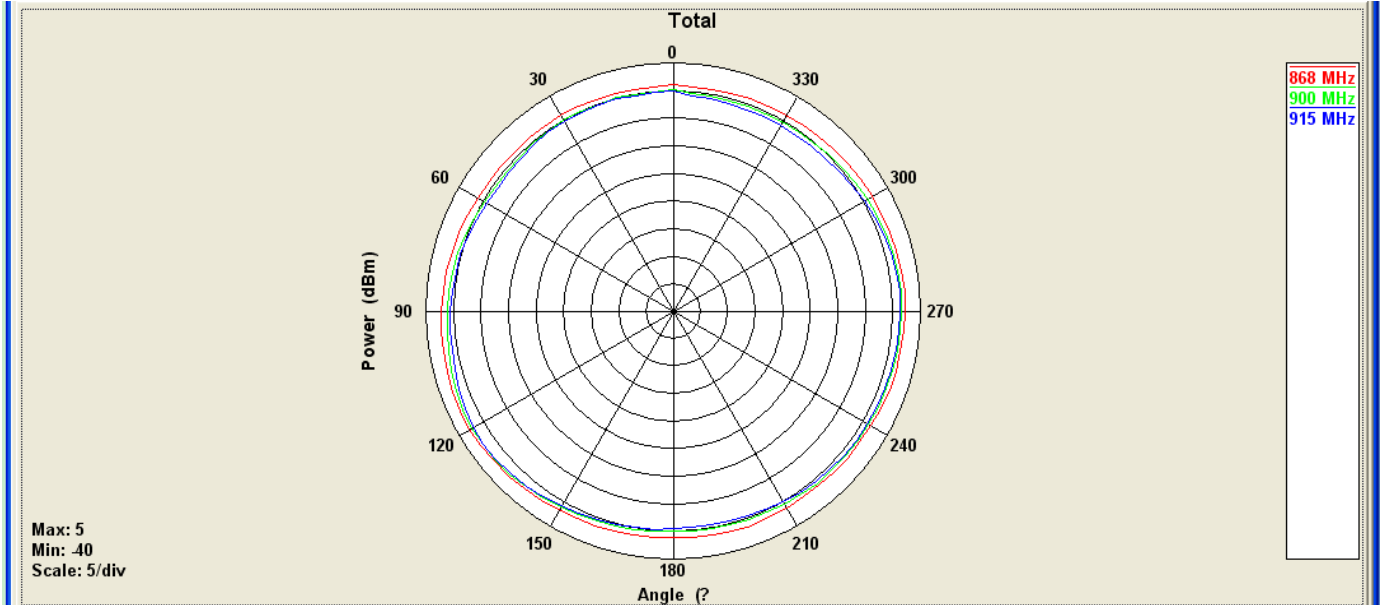


Electrical Properties

V.S.W.R

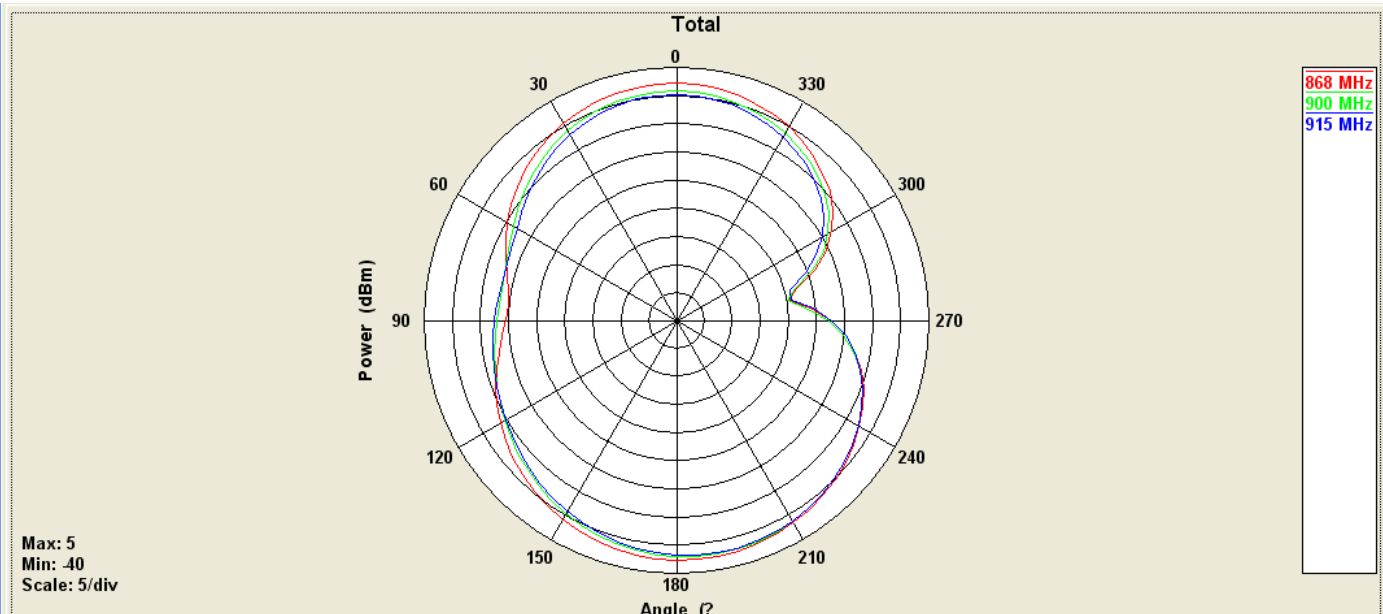


Electrical Properties Radiation Pattern – X-Z Plane



Frequency	868	900	915
Gain (dBi)	2.57379	2.19387	1.90371
Average Gain (dB)	1.36777	0.469915	0.069005

Electrical Properties Radiation Pattern – X-Y Plane



Frequency	868	900	915
Gain (dBi)	2.48019	1.96064	1.74751
Average Gain (dB)	-1.07485	-1.94488	-2.32207

Coaxial Cable Data Sheet
RG-178

SPECIFICATION FOR APPROVAL

DOCUMENT: A30178B001

STYLE : 105°C 30V
RG-178B/U

SIZE: 7/0.102 SCCS

RECOGNIZED: UL 1979



WONDERFUL HI-TECH CO.,LTD

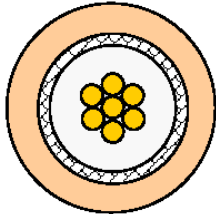
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TAIWAN, R.O.C.

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FAX : (03)4517214

 **WONDERFUL HI-TECH CO., LTD**
SPECIFICATION

STYLE	105°C 30V UL1979	DOCUMENT NO : A30178B001	
SIZE	RG-178B/U	ESTABLISHED DATE: 2004/03/22	
STANDARD : MIL-C-17			
Conductor	Size	AWG	30
	Material	----	Silver-Coated Copper Clad Steel
	Conductors No.	----	7
	Conductors Size	mm	0.102
	O.D.	mm	0.30
Insulation	Average Thickness	mm	0.28
	Diameter	mm	0.86 ±0.03
	Material	----	FEP
	Color	----	Clear
Braid	Material	----	Silver-Coated Copper
	Construction	mm	16 / 3 / 0.10
	Coverage	%	95
Jacket	Average Thickness	mm	0.25
	Diameter	mm	1.80 ±0.05
	Material	----	FEP
	Color	----	Brown
Marking			
Drawing			

AK001/210X297/1.0

PAGE : 1

EDITION : 1.2

MAKER : C.Y.CHEN

CONFIRM : S.N.WONG

APPROVAL : W.J.WANG



**WONDERFUL HI-TECH CO., LTD.
SPECIFICATION**

Electrical & Physical Properties						
Item		RG-178B/U				
Rating Temp Voltage		105°C 30V				
Conductor Resistance		838 OHM/KM/20°C MAX.				
Insulation Resistance		3000 MEGA OHM/KM MIN.				
Dielectric Strength		AC 500V/Minute				
Spark Test		2.5 KV				
Insulation	Unaged	Tensile Strength	2500 PSI MIN.(1.76 Kg / m m ²)			
		Elongation	200% MIN.			
	Aged	Tensile Strength	UNAGED MIN 75%(168HRS×232°C)			
		Elongation	UNAGED MIN 75%(168HRS×232°C)			
Jacket	Unaged	Tensile Strength	2500 PSI MIN.(1.76 Kg / m m ²)			
		Elongation	200% MIN.			
	Aged	Tensile Strength	UNAGED MIN.75%(168HRS×232°C)			
		Elongation	UNAGED MIN.75%(168HRS×232°C)			
Nom. Impedance		50 Ohms				
Nom. Capacitance		95.8 pF/m				
Nom. Vel. of Prop.		69.5%				
VSWR (0 – 6 GHZ)		UNDER 1.3				
Attenuation (dB/100m)	100MHz	1GHz	1.8GHz	2.4GHz	5.2GHz	6GHz
	46	155	295	340	505	550

AK001/210X297/1.0

PAGE : 2

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MAKER : C.Y.CHEN

CONFIRM : S.N.WONG

APPROVAL : W.J.WANG

Housing Material Data Sheet

- Housing – TPU



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東莞宏德化學工業有限公司檢驗報告

DONG GUAN HONTEX CHEMICAL CO.,LTD. TEST REPORT

廣東省東莞市長安鎮霄邊工業區 Postcode:523850

Tel:(0769)85533620 Fax:(0769)85533635

http://www.dghontex.com.cn E-mail:hontex@pub.dgnet.gd.cn

品名 Product Name	TU56DG	製造批號 Lot No.	R80398005
送驗日期 Sample Received	2008/3/13	檢驗日期 Sample Tested	2008/3/14
檢驗項目 Test Items	標準值/測試條件 Spec./Test Method	檢驗結果 Test Results	
外觀 Appearance	/	霧狀	
拉伸強度(kg/cm ²) Tensile Strength	>300	496	
延伸率(%) Elongation	>380	603	
100%模量(kg/cm ²) 100% modulus	>90	131	
硬度(ShoreD) Hardness	56±2D	55D	
熔融指數(g/10min) Melt Index	10kg/210°C	16.2	
熔融粘度(Pa.s) Melt Viscosity	10kg/210°C	3195	
色差 Color Index	/	11.1	
耐磨耗(mm3) Abrasion:DIN	/	59	
耐寒耐曲折性 Flexibility@-10°C	-10°C/4萬次	完好	
透明性 Transparency	/	不透明	
INSPECTION RESULT		PASS	

主管:
Supervisor:



檢驗員:
(Inspector):

王文忠

2008年4月9日

• Hinge (Base/Holder) – PC+ALLOY

SHINBLEND®

ALLOY

ENGINEERING PLASTIC DIVISION

SHINKONG SYNTHETIC FIBERS CORPORATION

新光合成纖維股份有限公司

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Technical Data

工塑營業處

李文桂 分機 7548 行動：0935627706

台北市南京東路二段123號8樓

電話：02-25071251 FAX：02-25068047

SHINBLEND®
A724NA

High Impact Grade / 超韌級：AD4011

	Unit	Test Method	Values
Mechanical properties 機械性質			
Izod Impact(Notched) 23°C	Kg-cm/cm	ASTM D256	85
-20°C	Kg-cm/cm	ASTM D256	70
-40°C	Kg-cm/cm	ASTM D256	65
Tensile Strength	Kg/cm ²	ASTM D638	540
Elongation	%	ASTM D638	100
Flexural Strength	Kg/cm ²	ASTM D790	800
Flexural Modulus	Kg/cm ²	ASTM D790	20000
Rockwell Hardness	R	ASTM D785	115
Thermal properties 熱性質			
Heat Deflection Temperature		ASTM D648	
66psi	°C		-
264psi	°C		100
Flammability	-	UL94	-
Melting Point	°C	DSC	223
Electrical properties 電氣性質			
Dielectric Strength	KV/MM	ASTM D149	-
Dielectric Constant	...	ASTM D150	-
Volume Resistivity	Ω-CM	ASTM D257	-
Other properties 其它性質			
Specific Gravity	-	ASTM D792	1.19
Water Absorption	%	ASTM D570	0.14
Mold Shrinkage		ASTM D955	
Flow	%		0.4~0.6
Cross Flow	%		0.5~0.7

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