

承 認 書
SPECIFICATION FOR APPROVAL

客 戶
CUSTOMER

Ettus Research LLC

日 期
DATE

2011/4/25

品 名
DESCRIPTION

WSS016 824~960-1710~1990MHz
Antenna with SMA(M)(Black)

客 戶 料 號
CUSTOMER P/N

VERT900

成 品 編 號
Part NO.

RU1MPA0001A 02



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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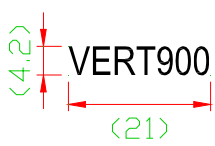
SPECIFICATION

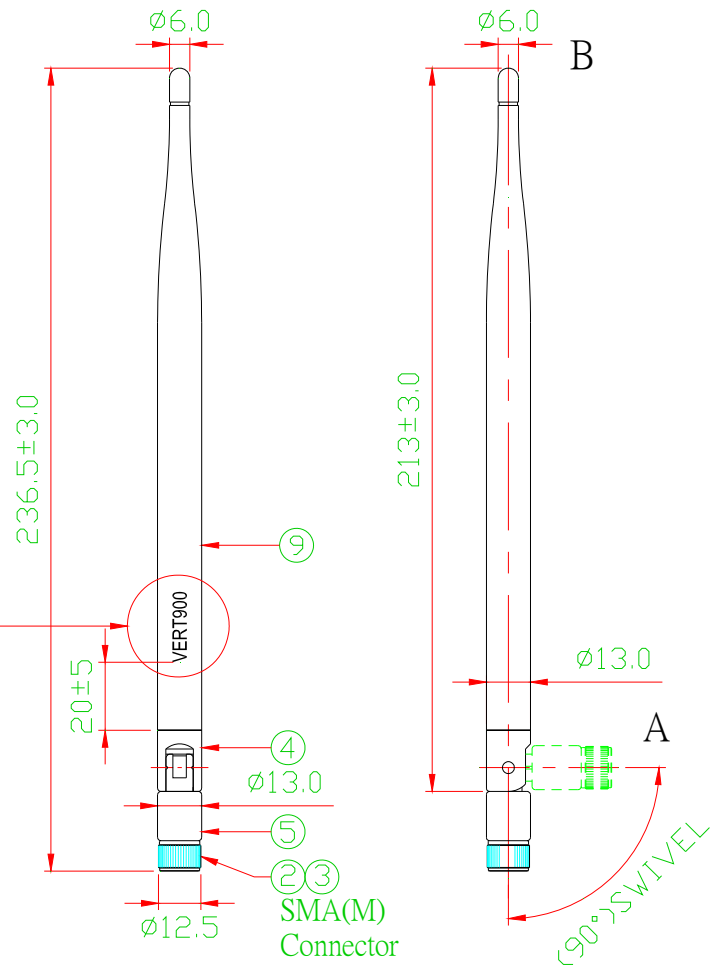
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|----|----------------------------|------------------------------|
| 1. | Description | : WSS016 Antenna With SMA(M) |
| 2. | Customer | : Ettus Research LLC |
| 3. | Model No. | : WSS016 |
| 4. | Part No. | : RU1MPA0001A |
| 5. | Antenna Profile | : 236.5 mm (see Drawing) |
| 6. | Color | : Black |
| 7. | Electrical Characteristics | |
| | Operating Frequency | : 824~960-1710~1990MHz |
| | Antenna Type | : Dipole |
| | Polarization Type | : Linear |
| | Type of Radiation | : Toroidal |
| | Impedance | : 50 Ohm nominal |
| | V.S.W.R. | : 3.0:1 Max. |
| 8. | Mechanical Characteristics | |
| | Swivel | : 90 degrees |
| | Connector | : SMA(M) |
| | Core | : N/A |
| 9. | Raw Material | |
| | Coaxial Cable | : RG-316 |
| | Housing | : TPU |
| | Hinge | : PC+ALLOY |

TOLERANCES:		Signature / Stamp	☒ Customer Approved ☐ Unofficial Drawing		機構 (技術分類) :	
X	±0.5				應用 (業務分類) :	
X.X	±0.3				材質 (生管分類) :	
X.XX	±0.1					
ANGULAR	±5.0°					

Imprint:

- "VERT900" White imprinted and in the middle section of radome
- Font: Arial Bold
- Dim.: As below





NO	Material	GM	Description	Color	Dim	Q'ty	Remark
9	Housing<Black>	√	@WSS016 13 φ *195L Housing<Black>	Black		1	or Equivalent
8	Sleeve	√	@7.4 φ *50.0L Sleeve For RG-316	Brass/Silver		1	or Equivalent
7	Sleeve	√	@6.6 φ *75L Sleeve For RG-316	Brass/Silver		1	or Equivalent
6	Rivet	√	@028922001-6 4.80*1.95 φ Rivet	Black		2	or Equivalent
5	Hinge-Base<Black>	√	@13 φ Hinge-Base*25.5L <Black>	Black		1	or Equivalent
4	Hinge-Holder<Black>	√	@WSS016 13 φ *33L Hinge-Holde <Black>	Black		1	or Equivalent
3	SMA(M) φ 12.5 Shaft	√	@0832A SMA(M) Shaft φ 12.5 For RG316	Silver		1	or Equivalent
2	SMA(M) φ 12.5 Body	√	@0526A SMA(M)12.5D 19.4L Connector	Black		1	or Equivalent
1	RG-316 Coaxial Cable	√	@RG-316 CABLE 105SV	Orange	192	1	or Equivalent

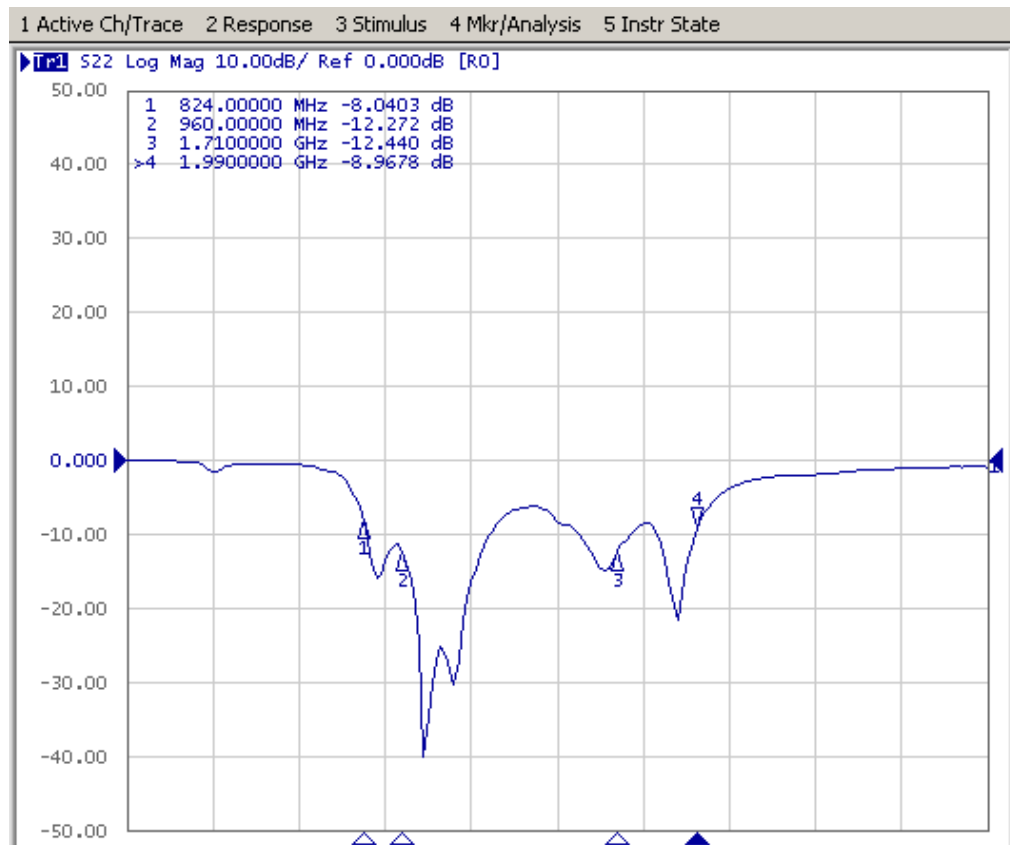
Revise Date: 2011/04/25		Edit Date: 2010/10/25		PART NUMBER		VERT900	
3rd VIEW	APPROVED	CONFIRM	CHECK	DRAWING	PART NAME		
UNIT: mm	Jason	C.S.LIU	Emily	Mandy	WSS016 824~960 / 1710~1990MHz Antenna with SMA(M) (Black)		
SCALE:FREE					CATEGORY	☒ A:Product ☐ B:Semi-Production ☐ C:Sample	
					Engineering NO.	RU1MPA0001A	VERSION 02

衛星廠成品編號 :
文件編號 : FMT-0513-H5
頁次: 1/1

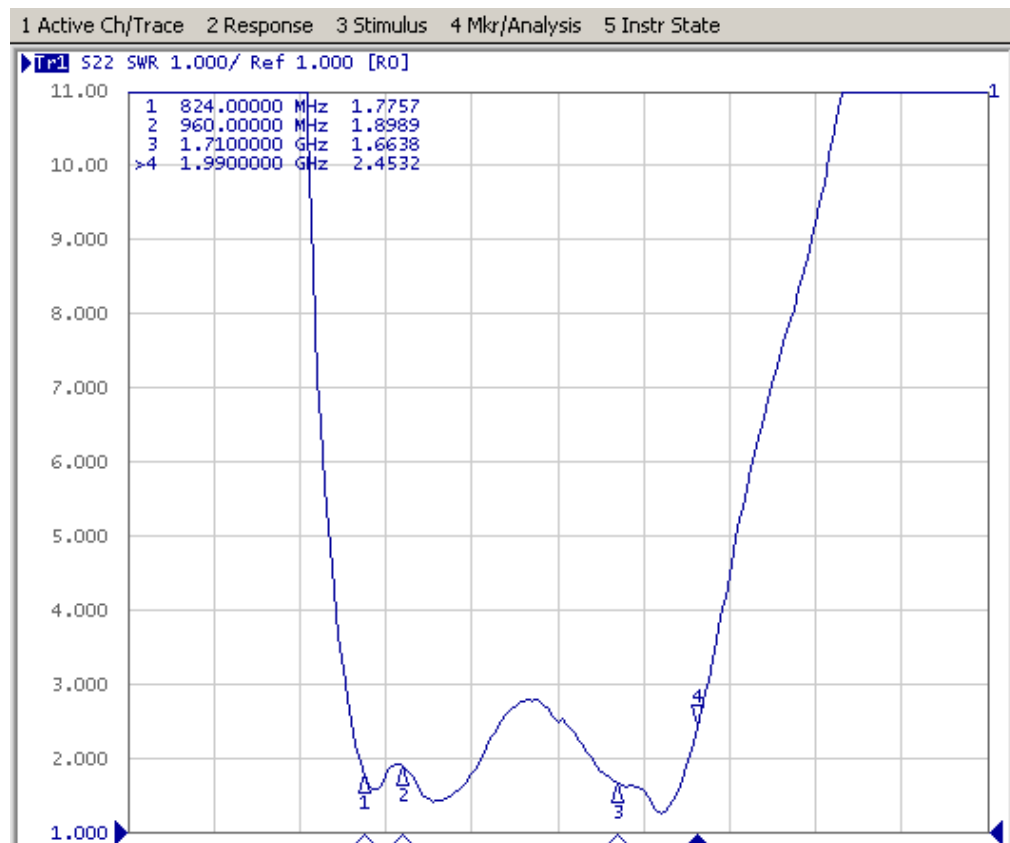
WANSHIH ELECTRONIC CO., LTD.



Electrical Properties Return Loss



Electrical Properties V.S.W.R



Coaxial Cable Data Sheet
RG-316

SPECIFICATION FOR APPROVAL

DOCUMENT: A30316U008

STYLE : 105°C 30V
RG-316/U

SIZE: 7/0.17 SCCS

RECOGNIZED: UL 1979



WONDERFUL HI-TECH CO.,LTD

OFFICE : 72WU KONG 6TH ROAD,
WU KU IND. DISTRICT
TAIPEI HSIEN, TAIWAN

TEL : (02)22988033
FAX : (02)22988031-2

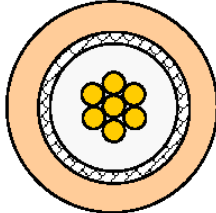
FACTORY : 17 PEI YUAN ROAD,
CHUNG-LI IND. PARK
TAIWAN, R.O.C.

TEL : (03)4527777
FAX : (03)4517214



WONDERFUL HI-TECH CO., LTD

SPECIFICATION

STYLE	105°C 30V UL1979	DOCUMENT NO : A30316U007
SIZE	RG-316/U	ESTABLISHED DATE: 2004/03/22
STANDARD : MIL-C-17		
Conductor	Size	AWG 26
	Material	----- Silver-Coated Copper Clad Steel
	Conductors No.	----- 7
	Conductors Size	mm 0.17
	O.D.	mm 0.51
Insulation	Average Thickness	mm 0.51
	Diameter	mm 1.53 ± 0.03
	Material	----- FEP
	Color	----- Clear
Braid	Material	----- Silver-Coated Copper
	Construction	mm 16 / 5 / 0.10
	Coverage	% 95
Jacket	Average Thickness	mm 0.30
	Diameter	mm 2.53 ± 0.10
	Material	----- FEP
	Color	----- Brown
Marking	M17/113-RG316 MIL-C-17 WONDERFUL	
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-316/U			
Rating Temp Voltage				105°C 30V			
Conductor Resistance				302 OHM/KM/20°C MAX.			
Insulation Resistance				3000 MEGA OHM/KM MIN.			
Dielectric Strength				AC 1 KV/Minute			
Spark Test				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)	1MHZ	100MHZ	1.8GHZ	2.4GHZ	5.2GHZ	6GHZ	
	10.2	34.1	180	206	315	345	

AK001/210X297/1.0

PAGE : 2

EDITION : 1.2

MAKER : C.Y.CHEN

CONFIRM : S.N.WONG

APPROVAL : W.J.WANG

Housing Material Data Sheet

• Housing – TPU



HONSANE

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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	制 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℃	16.2	
熔融粘度(Pa.s) Melt Viscosity	10kg/210℃	3195	
色 差 Color Index	/	11.1	
耐磨耗(mm3) Abrasion:DIN	/	59	
耐寒耐曲折性 Flexibility@-10℃	-10℃/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

8th Fl., 123, Sec.2, Nanking East Road, Taipei, Taiwan

Tel : 886-2-2507-0131 886-2-2507-1251(30Lines) 886-3-4932131-1730

Fax : 886-2-2506-8047 886-3-491-5763

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	衝擊強度 Kg-cm/cm	ASTM D256 85
-20°C	衝擊強度 Kg-cm/cm	ASTM D256 70
-40°C	衝擊強度 Kg-cm/cm	ASTM D256 65
Tensile Strength	拉伸強度 Kg/cm ²	ASTM D638 540
Elongation	拉伸率 %	ASTM D638 100
Flexural Strength	彎曲強度 Kg/cm ²	ASTM D790 800
Flexural Modulus	彎曲模數 Kg/cm ²	ASTM D790 20000
Rockwell Hardness	洛氏硬度 R	ASTM D785 115
Thermal properties 熱性質		
Heat Deflection Temperature	熱變形溫度	ASTM D648
66psi	°C	-
264psi	°C	100
Flammability	防火性 -	UL94 -
Melting Point	熔點 °C	DSC 223
Electrical properties 電氣性質		
Dielectric Strength	介電強度 KV/MM	ASTM D149 -
Dielectric Constant	介電常數 ...	ASTM D150 -
Volume Resistivity	體積電阻 Ω-CM	ASTM D257 -
Other properties 其它性質		
Specific Gravity	比重 -	ASTM D792 1.19
Water Absorption	吸水率 %	ASTM D570 0.14
Mold Shrinkage	成形收縮率	ASTM D955
Flow	流動方向 %	0.4~0.6
Cross Flow	垂直方向 %	0.5~0.7

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