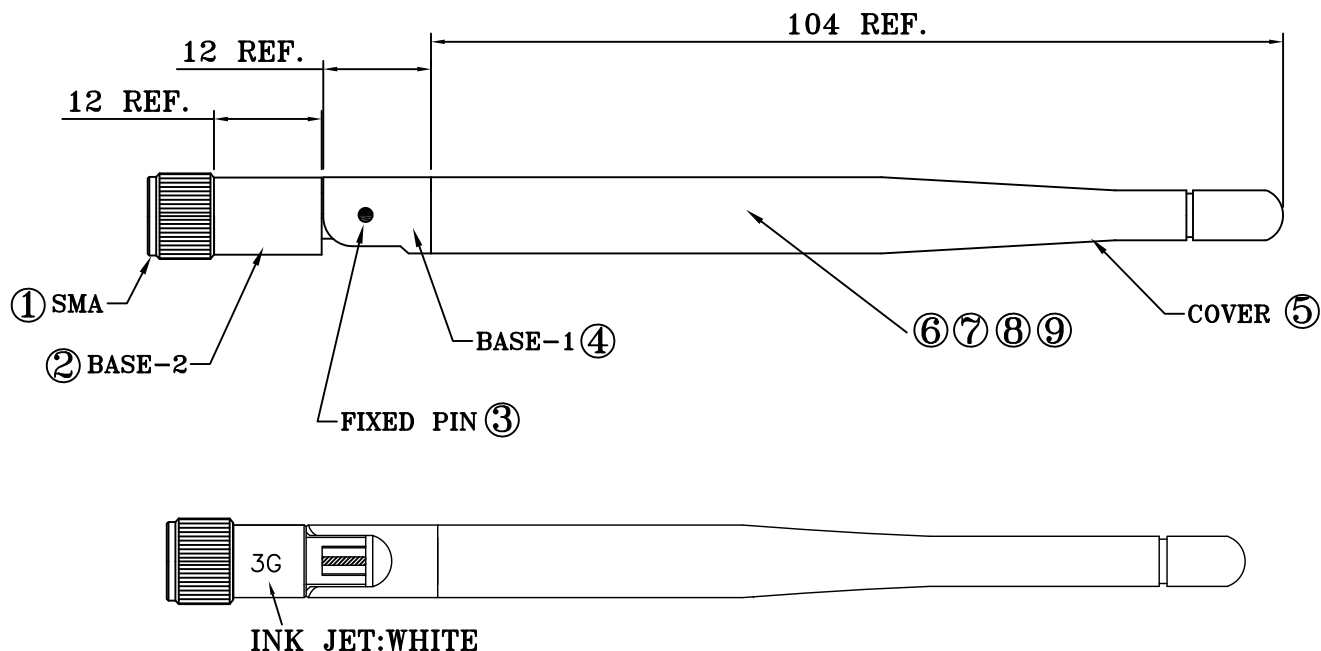


RoHS Compliant

REV	DATE	DESCRIPTION	ECN NO.	NAME
A	10.11.24	NEW RELEASE		

A
B
C
D
E



NOTES:

1. Use Environmental Protect Material (RoHS Compliant).
2. VSWR:3.0 MAX.(824~960MHz / 1710~2170 MHz)
3. Release the spec. base on the proposal drawing Revision-01 as customer approval.

⑩	GPB-EA18204XX	PE BAG,180*200mm,50PCS OF A BAG	1/50
⑨	Teflon	Teflon,Holder	1
⑧	Copper Tube	Copper Tube,Tinned Plated,	1
⑦	Copper Tube	Copper Tube,Tinned Plated,	1
⑥	GMINI-178B01D137S	Mini Coaxial Cable,OD:1.37mm , FEP Black Jacket	1
⑤	GYM111-B010104A	COVER,TPEE;BLACK(DS-417)	1
④	GYM111-B020104A	BASE-1,PC;BLACK(DS-418)	1
③	G0102-7801013	FIXED PIN,POM:BLACK	2
②	GYM111-B030100A	BASE-2,PBT:BLACK	1
①	G7109-20020202	SMA MALE,SHELL:BLACK POM	1
NO.	ITEM	DESCRIPTION	QTY

WIESON TECHNOLOGIES CO., LTD
WIESON

PART NO.:
GY115HT467-003

TITLE:		DRAWN BY	DRAWING NO.	DRAWING SIZE	
3.5G SMA ANTENNA		River(WSC)	GY115HT467-003	NONE	A3
CHECKED BY		Tammy	UNIT	mm	
APPROVED BY		Andy	PAGE	1 OF 1	
SORTING NO.		WSC			



WIESON TECHNOLOGIES CO.,LTD

BILL OF MATERIAL

Cust.	永洋	TITLE	3.5G SMA ANTENNA				
Cust.P/N	11320Y11070A1	WIESON P/N	GY115HT467-003				
NO.	DESCRIPTION	SUPPLIER	SUPPLIER PART NO.	UL NO.	AVL	QUANTITY	REMARK
1	SMA MALE,SHELL:BLACK POM					1PCS	
2	BASE-2,PBT:BLACK					1PCS	
3	FIXED PIN,POM:BLACK					2PCS	
4	BASE-1,PC;BLACK(DS-418)					1PCS	
5	COVER,TPEE;BLACK(DS-417)					1PCS	
6	Mini Coaxial Cable,OD:1.37mm , FEP Black Jacket					mm	
7	Copper Tube,Tinned Plated					2PCS	
8	Teflon,Holder					1PCS	

APPROVED BY:Andy

CHECKD BY: Tammy

DESIGNED BY: River

I. SUMMARY :

This report to account for the measurement setup and result of the Antenna.

1. The measurement setup includes s-parameter, pattern, and gain measurement.
2. The measured data for Antenna are presented and analysis.

II. S-PARAMETER MEASUREMENT :

A. Reflection coefficient :

(a) Instrument : Network Analyzer.

(b) Setup :

- (1) Calibrate the Network Analyzer by one port calibration using O.S.L. calibration kits.
- (2) Connect the antenna under test to the Network Analyzer.
- (3) Measure the S11(reflection coefficient) shown in Fig. 1.
- (4) Generally, the S11 is less than -10dB to ensure the 90% power into antenna and only less than 10% power back to system.

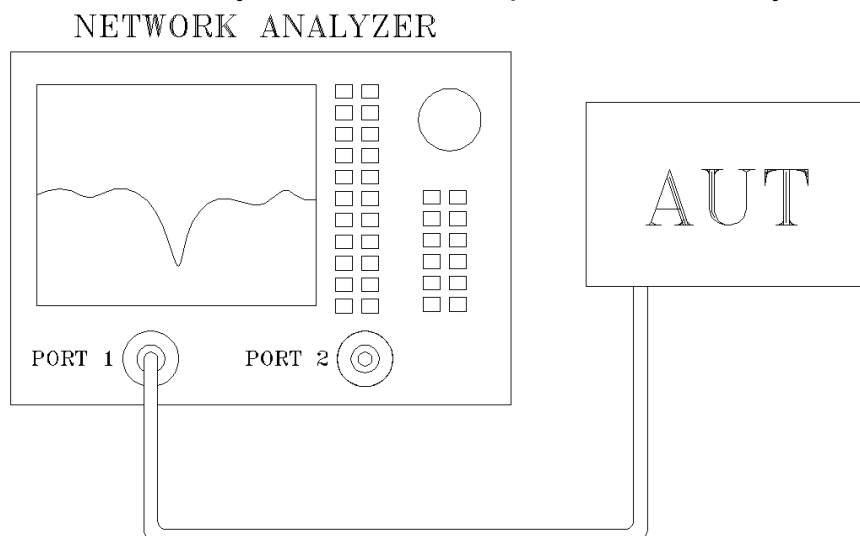
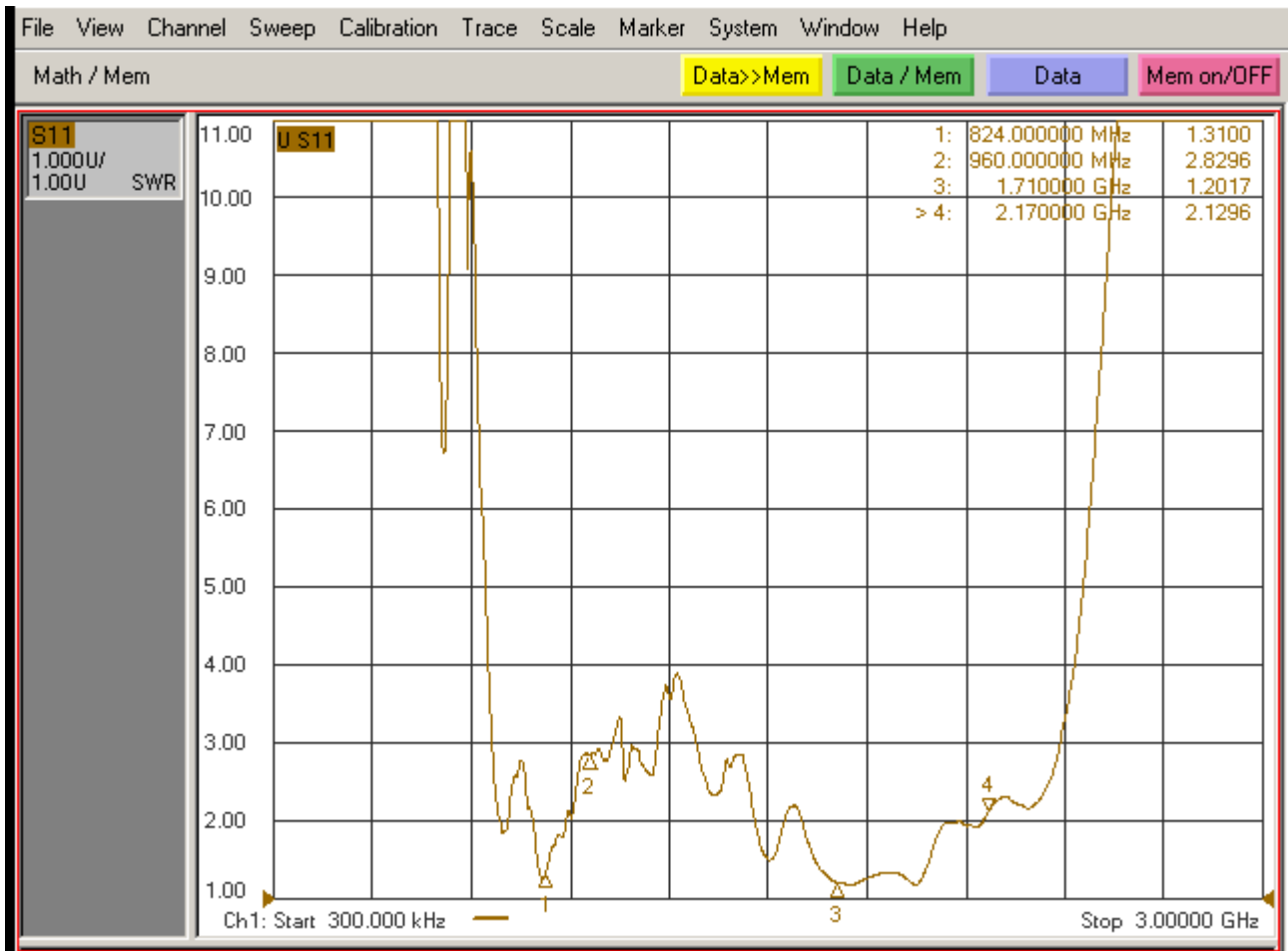


Fig.1 Antenna measured in Network Analyzer



III. S-PARAMETER TEST RESULT :

Frequency	824MHz	960MHz	1710MHz	2170MHz
Sample				
1	1.3100	2.8296	1.2017	2.1296



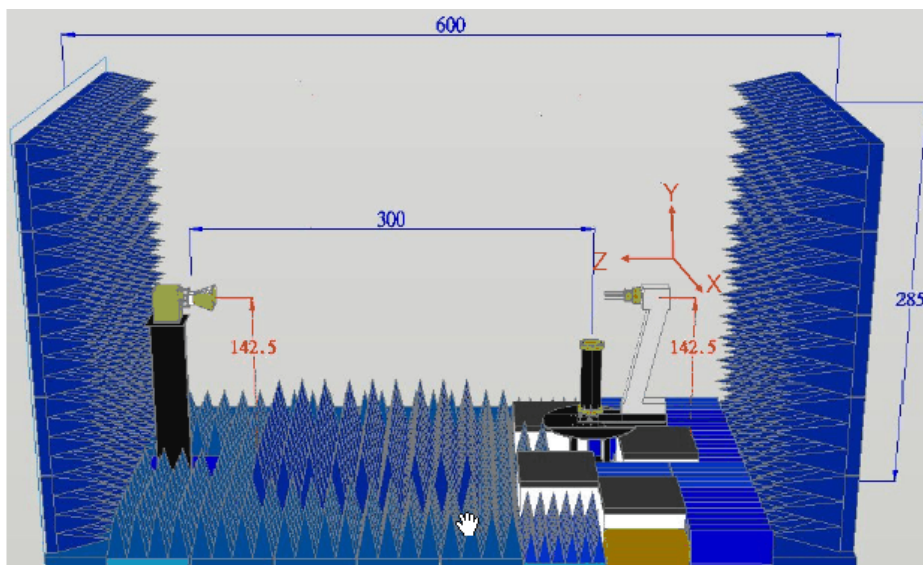


IV. THE TEST INFORMATION IN ANECHOIC CHAMBER

A. Scope

This statement of work defines the requirements of a far-field antenna measurement range, which includes

- (1) One 325 cm (W) x 285 cm (H) x 640 cm (L) Antenna Measurement Anechoic Chamber, detailed requirements refer section 2.0 .
- (2) One Far-field Antenna Measurement System with spinning linear CP measurement capabilities, detailed requirement refer section 3.0 .
- (3) One broad-band transmitted antenna, detailed requirements refer section 8.0 .
- (4) Three NRL-4433 standard gain antennas, detailed requirements refer section 9.0 .



B. Antenna Measurement Anechoic Chamber

Fully anechoic chamber with dimension 325 cm in width, 285 cm in height and 640 cm in length. The quiet zone of this Chamber shall be greater than



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MEASUREMENT AND PERFORMANCE

PAGE : 4/8

70 cm @ 0.9 GHz, 50 cm @1.8 GHz, 44 cm @2.4 GHz, 28 cm @5.8 GHz, 16 cm @18 GHz. Contractor should be aware of this anechoic chamber is going to be used for performing far-field antenna measurement.

C. Electrical specifications

Frequency Range: 800 MHz to 18 GHz,

Quiet zone size: >70 cm @ 0.9 GHz, >50 cm @1.8 GHz, >44 cm @2.4 GHz,

>28 cm @5.8 GHz, >16 cm @18 GHz.

Quiet zone ripple: < +/- 0.5 dB @1.5~2.4 GHz, < +/- 0.25 dB @2.4~18GHz

Field Probing Frequency	Peak-to-Peak Amplitude Ripple (within specified Quiet Zone Area)	Quiet Zone Size (cm)	Compliant
0.9 GHz	< 0.8 dB	70	Yes
1.575 GHz	< 0.6 dB	55	Yes
1.8 GHz	< 0.5 dB	50	Yes
2.45 GHz	< 0.4 dB	44	Yes
4.8 GHz	< 0.3 dB	31	Yes
5.8 GHz	< 0.3 dB	28	Yes



D. Absorbers

We shall design and install proper absorbers on the inner walls of the chamber to guarantee the electrical specifications . However, the absorbers height shall be no less than 24" which enables the space in the chamber to be around 203 cm (W) x 163 cm (H) x 533 cm (L). All the absorber used shall meet NRL-8093 fire retardant regulations

E. Far-field Antenna Measurement System

We shall supply all the hardware and software which are capable of characterizing antenna radiation patterns from 30 KHz to 6 GHz or 18GHz using the existed Agilent 5230A PNA-L or Agilent 8753ES Vector Network Analyzer. The system shall be able to automatically measure and plot single axis amplitude and phase antenna patterns in either Cartesian or polar formats.

F. Far-field measurement software

The software consists of the control or data acquisition software and the data plotting software.

(1) The data acquisition software shall at least be capable of the following functions:

- *measuring single frequency per cut - single axis (azimuth); system can automatically switch frequency at the end of a scan.
- *measuring data in Uni-direction or bi-direction
- *measuring data at least with azimuth 360 degrees. (+/- 180 degrees or 0-360 degrees)
- *real time plot in Cartesian or polar format
- *screen shows real time angle position
- *system automatically calculates S/N ratio level based on measured



signal fluctuation

*function to set positioner zero position

*operator can set data taking velocity and data sampling interval

*entry to allow positioner offset to any angle

(2) The data plotting software shall at least be capable of the following functions:

*Editing plot data

*plotting data in Cartesian, Polar or delimited ASCII output with header information

*plotting data in linear or dB scales

*normalizing data to peak (dB), standard gain reference (dBi), or no normalization

*overlying data, (drag and drop capability is preferable)

*outputting data to any Windows supported printers

G. Broadband Transmitted antenna

We shall provide a linear-polarized broadband antenna with the specifications better than those listed hereafter in this article,
Frequency: 1-18 GHz, Gain: >12 dBi @10 GHz, VSWR:<2,0:1, Front to Back Ratio > 20 dB

H. NRL4433 Standard Gain Horns

We shall provide one WR-430, WR-187 one DRH0118 standard gain horns which meets the specifications of NRL-4433 report. The operating frequency of WR-430 standard gain horn is from 1.7 to 2.6 GHz, and WR-187 from 3.95 to 5.85 GHz, and DRH-0118 from 0.8 to 18GHz. We shall also provide NRL-4433 theoretical gain curves and tables for the standard gain horns.



V. CHAMBER TEST RESULT

Frequency(MHz)	824	836	849	869	880	894
Gain Power	-2.1	-1.82	-2.18	-1.42	-1.3	-1.23
Avg Gain	-5.13	-4.38	-5.26	-5.16	-4.52	-4.32
EFFICIENCY(%)	26	25	28	30	33	35

Frequency(MHz)	900	915	925	940	960	
Gain Power	-0.86	-0.36	-0.18	0.19	0.21	
Avg Gain	-3.52	-3.32	-3.28	-3.1	-2.66	
EFFICIENCY(%)	43	45	51	48	56	

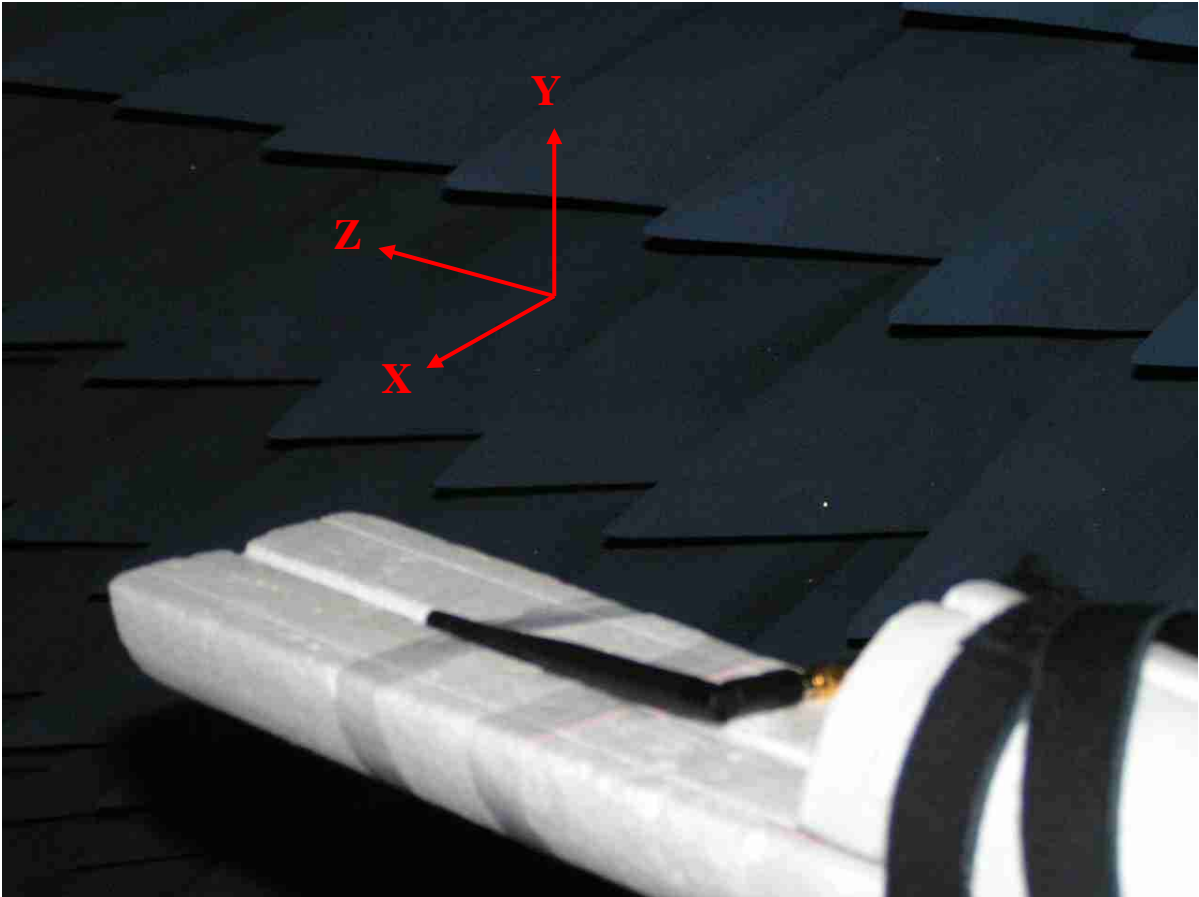
Frequency(MHz)	1710	1750	1785	1805	1840	1850
Gain Power	0.31	0.53	0.46	0.61	0.57	0.85
Avg Gain	-2.98	-2.8	-2.65	-2.43	-2.2	-2.12
EFFICIENCY(%)	53	58	56	62	66	68

Frequency(MHz)	1880	1910	1920	1930	1950	1960
Gain Power	1.21	1.12	1.38	1.32	1.29	1.41
Avg Gain	-2.02	-2.15	-2.1	-2.21	-2.28	-2.11
EFFICIENCY(%)	61	68	63	60	62	65

Frequency(MHz)	1980	1990	2110	2140	2170	
Gain Power	1.46	1.92	2.0	1.8	1.83	
Avg Gain	-1.93	-1.82	-1.85	-1.73	-1.68	
EFFICIENCY(%)	65	63	68	64	62	



VI. CHAMBER TEST PICTURE



型号 Type	RF-1.37/50	料号 P/N	SY137/50-001(Black)	
结构图 Structure drawing				
结构特性 Structure characteristics				
结构 Structure	项目 Item	标准值 Standard value		
①内导体 Inner conductor	材料 Material	镀银铜线 Silverplated copper wire		
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)	7/0.102		
	(绞合)标称外径(mm) (Intertwist)NOM.O.D.(mm)	0.306±0.02		
②绝缘层 Insulation	材料 Material	聚四氟乙烯 PTFE		
	颜色 Color	本色 Natural		
	标称外径(mm) NOM.O.D.(mm)	0.9±0.03		
③外导体 Outer conductor	材料 Material	镀银铜线 Silverplated copper wire		
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)	5/0.05		
	标称外径(mm) NOM.O.D.(mm)	1.13±0.05		
	覆盖率(%) Coverage ratio(%)	≥90		
④护套层 Jacket	材料 Material	聚全氟乙丙烯 FEP		
	颜色 Color	黑 Black		
	标称外径(mm) NOM.O.D.(mm)	1.37±0.05		
电性能特性 Electrical characteristics				
项目 Item	标准值 Standard value	项目 Item	频率 Frequency	标准值 Standard value 单位 Unit:dB/m
电容(pF/m) Capacitance(pF/m)	≤96	衰减 Attenuation	1GHz	≤1.5
速率(%) Velocity(%)	70		2GHz	≤2.2
阻抗(Ω) Impedance(Ω)	50±2		3GHz	≤2.8
驻波比 Standing wave ratio	≤1.3@0~6GHz		4GHz	≤3.4
最大工作电压(V) Max.operating voltage(V)	1000		5GHz	≤3.8
最大工作频率(GHz) Max.operating frequency(GHz)	6		6GHz	≤4.2
机械性能特性 Mechanical characteristics				
项目 Item	单位 Unit	标准值 Standard value		
最小弯曲半径(一次) Min.bending radius static	mm	5		
最小弯曲半径(重复) Min.bending radius repeated	mm	—		
工作温度范围 Operating temperature	℃	-55~+200		

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5

版本	日期	說明	ECN NO.	NAME
A	10.09.08	原始版本		

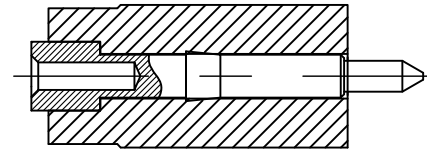
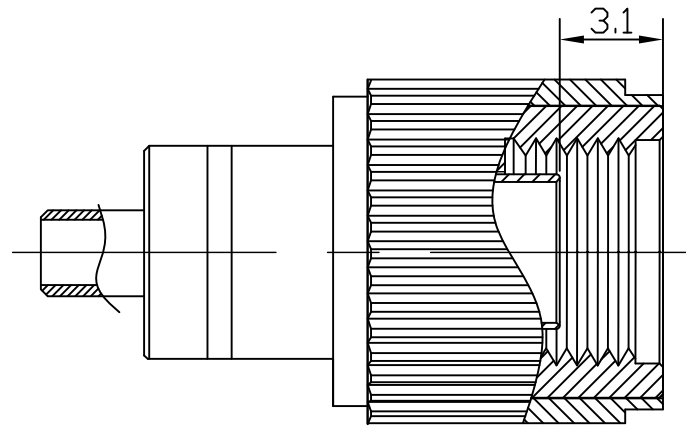
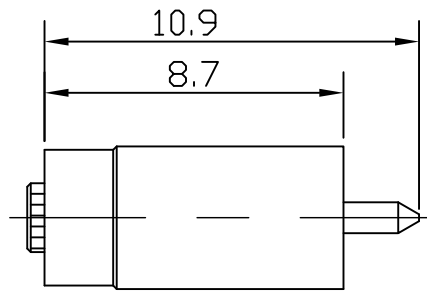
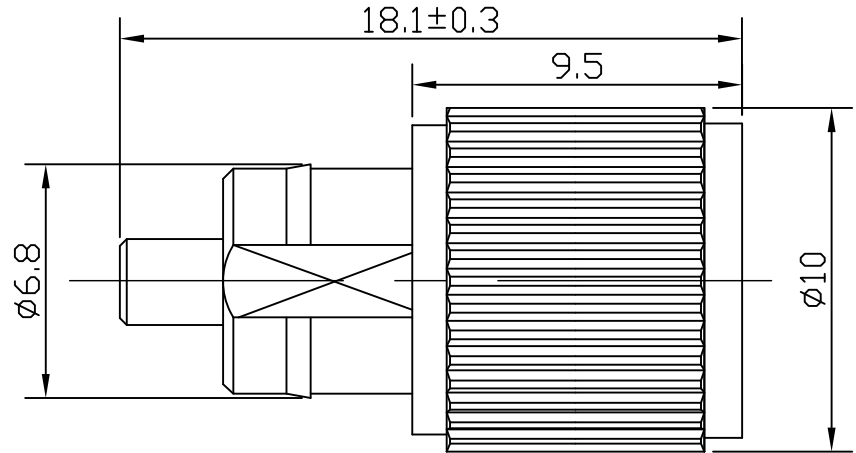
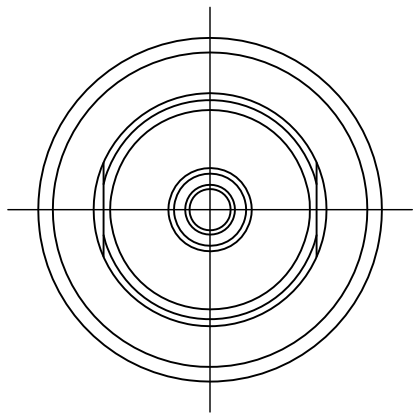
A

B

C

D

E



說明：
 旋转头，材質為BRASS鍍銀；
 护套，材質為POM，黑色；
 本体，材質為BRASS鍍銀；
 胶芯，材質為TEFLON；
 PIN，材質為BRASS鍍金；

Ⓢ :Critical Dim Ⓞ :Major 一般尺度公差 ** ±0.10mm * ±0.20mm 一般角度公差±2°	WIESON TECHNOLOGIES CO., LTD WIESON		PART NO.: G7109-20020202	
	DRAWN BY	Tony	DRAWING NO.	G7109-20020202
	CHECKED BY	TAMMY	DRAWING SIZE	A4
	APPROVED BY	TOLIN YANG	UNIT	mm
	SORTING NO.	WSC	PAGE	1 OF 1